

NAVSEA EVM Schedule Health Checks

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Version Notes

Version 1.2 revises the Excel macros and related steps to simplify.

The Excel and MS Project Filters and Sorts have been updated. Please do not use the prior versions.

Introduction

A key component of an EVM surveillance is the health of the program's Integrated Master Schedule (IMS) (Guidelines 6 and 9). The tests defined in this section are intended to be performed quarterly on all programs subject to surveillance. These tests are broader than the DCMA 14-point check and map to the 5 Generally Accepted Scheduling Principles (GASP). The results of the checks serve two purposes:

- To determine findings to improve the integrity of the IMS and encourage sound scheduling practices
- To determine areas of risk and focus for the CAM discussion phase

The GASP were developed jointly and informally accepted by DOD and industry (informal coordination through Program Planning and Scheduling Subcommittee (PPSS) a joint NDIA committee). They are repeated in Appendix A for reference. Note that the Planning and Scheduling Excellence Guide (PASEG) is documentation with more detail that is currently in review by the government and has not yet been accepted.

Conducting the Tests

These tests may be conducted in MS Project, Excel via a prescribed format, or in the contractor native tool jointly with the contractor. An independent approach is preferred if an MS Project file or the prescribed format can be obtained from the contractor quarterly.

1. Obtain from the contractor any definitions used for special fields that are typically captured in text, number, or memo fields. If work package unique fields are captured in a common field (example earned value technique, this mapping should also specify the field and code that is used. Define the following:
 - a. Earned Value Technique – Define what field and how to identify LOE, 50/50, 0/100, Apportioned, if any, in the schedule.
 - b. Any Planning Packages/Summary Planning Packages reference fields? May alternatively be captured in EVT field.
 - c. Documentation fields used for justification of relationships, leads/lags, and constraints.
 - d. Schedule Visibility Tasks identifiers (if any).
 - e. Schedule Margin Identifiers (if any).

2. Summary of the Tests. A quick summary of the scope of the assessment is provided below. There are 25 tests to cover 5 GASP Principles (Appendix 1). The criteria column is what we are measuring a finding against. The DCMA 14 point column maps the assessment to the 14 point equivalency. And the filter column is the named filters within the process that are used. Note that many of the tests use the same filter.

NAVSEA Schedule Health Assessment Test Summary						
Test Setup	GASP NA	Title Setup	Criteria	Summary	DCMA 14 Pt	Filter
			None	Counts the file size, used for calculations		N_Set (Excel Only)
1	1	Task Counts	None	Describes overall the IMS Content		N_Detail, N_Discrete, N_Milestone
2	1	% Base Duration > 44 d	95% ≤ 44d	How many baseline dur tasks >44d?	Yes	N-Basic
3	1	% Forecast Duration >44	75% ≤ 44d	How many forecast tasks dur >44d?		N_Basic2, BasicFix (Excel only)
4	1	Data Field Referencing	Exists	CA, CAM, IMP, WBS, SOW, EVT		N-Part
5	1	Baseline Dates and Dur	100%	All tasks should be baselined		N_MiISVT
6	1	Estimated Durations	None	MSP Unique		N_Part
7	1	Duplicate Task Titles	No duplicates	Checks for duplicative names		N_Summary (Non-Excel)
8	2	Missing Logic	All	All tasks should have pred/succ	Yes	N_LOEPART
9	2	Summary Tasks w/Logic	None	Summary tasks with discrete pred/succ		N_SumNonC
10	2	% Finish - Start Relationships	90%	Counting SS, SF, FF, subtracting from 1 for FS count	Yes	N_LOEPART
11	2	Total Float >44d	95% < 44 days	Looks for excessive float on future tasks	Yes	N_LOEPART
12	2	Total Float <10d	None	Looks for negative total float	Yes	N_LOEPART
13	2	Delay Constraints	<5 %	Looks for SNET, FNET		N_LOEPART
14	3	Leads	None	Looks for negative lag representing leads	Yes	N_LOEPART
15	3	Excessive Lags	None >20d	Looks for unrealistic lags	Yes	N_LOEPART
16	3	Documentation	None missing	All Constraints, Deadlines, leads and lags		N-Constraints
17	3	Constraints Preventing	None	No SNLT, FNLT, MSO, MFO except logical	Yes	N_Constraints
18	4	Status in the Future	None	MSP Unique; Actual Starts/Finishes in future	Yes	N_Future (Non-Excel)
19	4	Status through Time Now	All	Tasks are not status ahead or behind timenow	Yes	N_Prog (Non-Excel)
20	5	Push Forward Test		Tasks near term discrete task and distorts duration to test future network connection		N_LOEPART (Non-Excel)
21	5	Push Backward Test		Tasks end task and distorts duration to test the network backwards		N_LOEPART (Non-Excel)
22	5	LOE on Critical Path	None	Verifies LOE is not linked to discrete work		N_SummaryC (Non-Excel)
23	5	Constraints on Endpoint Mi	Exists	Verifies that key constraints have constraints		N_Milestone
24	6	BEI	0.95	Completed Tasks/Should have Completed	Yes	N_BEI (Excel Only), BEIFIX (Excel Only)
25	6	Task Hit/Miss	5%	Missed tasks /Total tasks	Yes	N_BEI (Excel Only), N_BEI 3 (Excel), BEIFIX (Excel Only)
Does not replicate the DCMA 14 performance tests: Resource, and CPIL metrics						

3. Obtain the current MS Project file and create the following view. If performing the test utilizing Excel, request that the contractor exports as an Excel spreadsheet with the following order (note titles are MS Project and may need adaptation to the contractor's IMS tool unique titles).
 - a. Column A "Task ID" **
 - b. Column B "Unique ID"
 - c. Column C "Task Name"
 - d. Column D "Milestone" (0 duration tasks)

- e. Column E “Percent Complete”
- f. Column F “Duration”
- g. Column G “Early Start” (also known as start)
- h. Column H “ Early Finish” (also known as finish)
- i. Column I “Actual Start”
- j. Column J “Actual Finish”
- k. Column K “Baseline Start”
- l. Column L “Baseline Finish”
- m. Column M “Baseline Duration”
- n. Column N “WBS”
- o. Column O “SOW”
- p. Column P “Control Account ID”
- q. Column Q “CAM name”
- r. Column R “Earned Value Technique” (must include ID for LOE, Apportioned, 0/100, 50/50, and planning packages as a minimum, may concatenate in Excel if necessary to make one field if the contractor captures this info in two or more field as each work package/planning package can only have one value)
- s. Column S* “Integrated Master Plan”
- t. Column T* “OBS”
- u. Column U* “Integrated Product Team”
- v. Column V “Predecessor”
- w. Column W “Successor”
- x. Column X “Constraint Type”
- y. Column Y “Total Float” (or slack)
- z. Column Z “lead/lag” (MS Project = Blank)
- aa. Column AA “Documentation” (Support justification for lags, constraints)
- ab. Column AB “SVT Indicator” (Yes/No)
- ac. Column AC& “Summary” (Yes/No)
- ad. Column AD& “Estimated” (Yes/No)
- ae. Column AE& “Deadlines” (Yes/No)
- af. Column AF& “Predecessor”

Where the “*” fields are optional; leave column blank if not applicable. AC – AF with the “&” are only applicable to MS Project and may be omitted from other scheduling tools. **MSP does not copy the first column so the recommend view in MSP includes this field. The MACROs will not process with the task ID field. If it is imported to Excel delete the first column so Excel starts with field “B” unique ID above. Excel columns are -1 to the letters above and end in column AE. The predecessor field is required twice due to how the macro uses the data.

- 4. Copy the provided Surveillance Schedule Health Check master file rename to a different name (program name and date is recommended).
- 5. If working in Excel take the contractor’s provided file and copy/paste it in row 4 of the newly copied Excel file as “text” format. The macro formulas will overwrite the first three rows.
- 6. If working in MS Project or other schedule tool and conducting the tests utilizing Excel, create the view compatible with #1 above. Be sure to apply the filter the schedule for “all tasks” to insure every line is displayed. Then select all and paste into Excel starting on line 4. Note if working with a large file the copy will take several minutes. An output example is below.

Navy CEVM EVM 5 GASP Tests (1 Dec 2012) V1.3

File Edit View Insert Format Tools Project Report Window Help														
Type a question for help														
N-summury														
BE EVM 5 and 9														
BE EVMS export														
IPRS Filter Flag11														
Late Milestone Filter														
Page and Line														
Updates														
2 week look ahead														
All Tasks														
Burn Up Chart														
Completed Tasks														
Critical														
Date Range...														
GATOR Customer View														
GATOR IMP														
GATOR Critical Path														
GATOR Material														
Incomplete Tasks														
Milestone Count														
Milestones														
RedTeam														
Replan														
Smart Discriminator														
Summary Tasks														
Task Range...														
Tasks With Estimated Durations														
Tier 1														
Tier 2														
Using Resource...														
USMC Review														
More Filters...														
AutoFilter														
Task ID														
Unique ID														
Task Name														
Milestone														
Completion														
Duration														
Early Start														
Early Finish														
Actual Start														
Actual Finish														
Baseline Start														
Baseline Finish														
Baseline Duration														
WBS														
Jan														
Feb														
Mar														
42	93579		No	100%	77 d	Mon 11/2/09	Mon 3/1/10	Mon 11/2/09	Mon 3/1/10	Mon 11/2/09	Mon 3/1/10	77 d	1.3.3	
43	93578		No	100%	77 d	Tue 3/2/10	Thu 6/17/10	Tue 3/2/10	Thu 6/17/10	Tue 3/2/10	Thu 6/17/10	77 d	1.3.3	
45	93577		No	100%	344 d	Mon 11/2/09	Fri 3/25/11	Mon 11/2/09	Fri 3/25/11	Mon 11/2/09	Thu 6/17/10	154 d	1.	
48	190552		No	100%	155 d	Mon 8/9/10	Fri 3/25/11	Mon 8/9/10	Fri 3/25/11	Mon 8/9/10	Fri 10/8/10	44 d	1.3	
46	93578		No	100%	77 d	Mon 11/2/09	Mon 3/1/10	Mon 11/2/09	Mon 3/1/10	Mon 11/2/09	Mon 3/1/10	77 d	1.3	
47	93579		No	100%	77 d	Tue 3/2/10	Thu 6/17/10	Tue 3/2/10	Thu 6/17/10	Tue 3/2/10	Thu 6/17/10	77 d	1.3	
119	93601		No	100%	230 d	Mon 11/2/09	Tue 10/5/10	Mon 11/2/09	Tue 10/5/10	Mon 11/2/09	Fri 6/18/10	155 d		
227	93694		Yes	100%	0 d	Tue 10/5/10	Tue 10/5/10	Tue 10/5/10	Tue 10/5/10	Fri 5/28/10	Fri 5/28/10	0 d	1.	
217	93685		No	100%	100 d	Fri 5/14/10	Tue 10/5/10	Fri 5/14/10	Tue 10/5/10	Wed 3/31/10	Fri 5/28/10	43 d	1.	
218	93686		No	100%	78 d	Fri 5/14/10	Thu 9/2/10	Fri 5/14/10	Thu 9/2/10	Wed 3/31/10	Tue 4/6/10	5 d	1.3	

Select All

Navy CEVM EVM 5 GASP Tests (1 Dec 2012) V1.3

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Task Count	9217																		
Task ID	Task Name	Milestone	%C	Duration	Early S	Early F	Act Start	Act Fin	Base Start	Base Finish	Bas Dur	WBS	SOW	CA	CAM	EVT	IMP	OBS	PT
92078	No			74% 704 d	11/2/2009 8:00	8/30/2012 17:00	11/2/2009 8:00	NA	3/29/2007 8:00	9/15/2011 17:00	1114 d	1							
188988	Yes			100% 0 d	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	0 d	1.1							
188984	Yes			0% 0 d	12/5/2011 17:00	12/5/2011 17:00	NA	NA	9/15/2011 17:00	9/15/2011 17:00	0 d	1.2							
191023	No			0% 94 d	12/5/2011 8:00	4/23/2012 17:00	NA	NA	NA	NA	0 d	1.16							
191024	No			0% 94 d	12/5/2011 8:00	4/23/2012 17:00	NA	NA	NA	NA	0 d	1.16.1							
92240	Yes			0% 0 d	8/30/2012 17:00	8/30/2012 17:00	NA	NA	4/30/2012 17:00	4/30/2012 17:00	0 d	1.24							
188989	Yes			0% 0 d	8/30/2012 17:00	8/30/2012 17:00	NA	NA	4/30/2012 17:00	4/30/2012 17:00	0 d	1.25							
190988	No			62% 52 d	2/11/2011 8:00	4/25/2011 17:00	2/11/2011 8:00	NA	2/14/2011 8:00	2/25/2011 17:00	10 d	1.9							
190989	No			100% 16 d	2/11/2011 8:00	3/4/2011 17:00	2/11/2011 8:00	3/4/2011 17:00	2/14/2011 8:00	2/17/2011 17:00	4 d	1.9.1							
190990	No			45% 36 d	3/7/2011 8:00	4/25/2011 17:00	3/7/2011 8:00	NA	2/18/2011 8:00	2/25/2011 17:00	6 d	1.9.2							
92228	No			0% 5 d	7/24/2012 8:00	7/30/2012 17:00	NA	NA	3/19/2012 8:00	3/30/2012 17:00	10 d	1.21							
190959	No			100% 49 d	12/6/2010 8:00	2/21/2011 17:00	12/6/2010 8:00	2/21/2011 17:00	12/6/2010 8:00	12/23/2010 17:00	14 d	1.8							
190961	No			100% 7 d	2/11/2011 8:00	2/21/2011 17:00	2/11/2011 8:00	2/21/2011 17:00	12/13/2010 8:00	12/23/2010 17:00	9 d	1.8.2							
190960	No			100% 42 d	12/6/2010 8:00	2/10/2011 17:00	12/6/2010 8:00	2/10/2011 17:00	12/6/2010 8:00	12/20/2010 17:00	11 d	1.8.1							
190432	No			0% 23 d	7/31/2012 8:00	8/30/2012 17:00	NA	NA	4/2/2012 8:00	4/30/2012 17:00	21 d	1.23							
92179	No			100% 452 d	11/2/2009 8:00	8/26/2011 17:00	11/2/2009 8:00	8/26/2011 17:00	11/2/2009 8:00	12/8/2009 17:00	25 d	1.14							
186877	No			100% 5 d	11/2/2009 8:00	11/6/2009 17:00	11/2/2009 8:00	11/6/2009 17:00	11/2/2009 8:00	11/6/2009 17:00	5 d	1.14.2							
186879	No			100% 7 d	11/2/2009 8:00	11/10/2009 17:00	11/2/2009 8:00	11/10/2009 17:00	11/2/2009 8:00	11/10/2009 17:00	7 d	1.14.3							
186880	No			100% 407 d	11/19/2009 8:00	7/13/2011 17:00	11/19/2009 8:00	7/13/2011 17:00	11/24/2009 8:00	12/8/2009 17:00	9 d	1.14.4							
186875	No			100% 33 d	11/19/2009 8:00	7/13/2011 17:00	11/19/2009 8:00	7/13/2011 17:00	11/24/2009 8:00	12/8/2009 17:00	9 d	1.14.4							
190687	SEIT																		
190688	SEIT																		
186899	REG SEIT																		
186900	REG SEIT																		
186901	REG SEIT																		
186902	REG SEIT																		
190384	REG SEIT																		
186904	REG SEIT																		
186905	REG SEIT																		
186892	REG SEIT																		
186898	REG SEIT																		
186893	REG SEIT																		
186894	REG SEIT																		
186897	REG SEIT																		
186896	REG SEIT																		
186923	REG SEIT																		
186896	REG SEIT																		
92432	PM																		
92433	PM																		
187222	PM																		
187223	PM																		
187220	PM																		
187221	PM																		
190101	No			92% 224 d	8/23/2010 8:00	7/18/2011 17:00	8/23/2010 8:00	NA	8/23/2010 8:00	4/13/2011 17:00	158 d	1.11							
190103	No			100% 33 d	9/21/2010 8:00	11/4/2010 17:00	9/21/2010 8:00	11/4/2010 17:00	9/20/2010 8:00	10/1/2010 17:00	10 d	1.11.2							
190106	No			100% 35 d	12/16/2010 8:00	1/14/2011 17:00	12/16/2010 8:00	1/14/2011 17:00	10/18/2010 8:00	10/29/2010 17:00	10 d	1.11.5							

Data as CNTL-V pasted into Excel. The first column task ID is omitted. If MS Project is not the source, ensure the Task ID field does not come over to Excel. The structure of the master spreadsheet must be maintained for the macros to process

- You are now ready to begin the tests. If unfamiliar with sorts and filters, and how to parse data in Excel, please consult Appendix B for a tutorial.

Conducting the Tests from Non-MS Project Sources

Any schedule tool that calculates critical path may be used as a source, and the test can be conducted utilizing Excel. The process is the same, with the following notes:

- Field names will be different; a map of step three above to MS Project titles will need to be prepared.
- The data from the source schedule may need to be modified (concatenated) before bringing into the Excel Schedule Heath master file. For example, Primavera has constraints on both the predecessor and successor. The Schedule Assessment Tool assumes there is one column with the constraints.
- The format structure and content must be maintained or the macro will not be usable and the test will need to be conducted manually. See the appendix for examples of how to conduct manually.
- The Excel Macros assume the columns are unchanged and in the same order. The MACROS may modify data so maintaining this order is required.

Format of Tests

All tests are described in the following format and definitions

- Overview: A short description of the goal of the test
- Criteria: If applicable, the threshold beyond which would be a finding or concern. The criteria is normally expressed as a percentage of discrete tasks.
- Filter: If you are manually creating the filter (for example conducting within the contractor tool) then convert the field names as necessary. Most filters utilize Summary, % Complete,

Actual Finish, and Milestone fields in MSP. Note the names given the filters are arbitrary but are contained in the files provided on the CD or MS Project. If the user is performing the test utilizing Excel, the filter will typically be applied with a macro.

- 4) Sort: As applicable, sort the filtered display – Sort by field specified in test. N/A for Excel as the macro performs the sort.
- 5) Steps in MS Project: As applicable, step by step instructions of procedures to accomplish after the filter-sort is applied to the schedule. Certain MS Project tests require parsing in Excel.
- 6) Steps in Excel: If analyzing the schedule completely utilizing Excel, the macro instructions are provided. Any test may be accomplished manually by following the filter and sort process of the Steps in MSP section. Note: Certain tests can only be performed in the native schedule tool.
- 7) How to Interpret: What to do with the results of the filter – sort – steps sequence. The interpretation categorizes the potential errors as findings or concerns for further discussions with CAM interviews. If the result is a finding, both the GASP and NDIA PMSC Intent Guide references are provided.

Note: For each of the tests a screenshot of the filter in MSP is provided to assist if performing the test directly in the native schedule tool.

Obtaining Help/Questions

If you have any questions or encounter problems, please contact the DON Center for Earned Value Management (CEVM). Contact information skdhthchk@delta-va.com

Tests by GASP Tenet

The following are the manual tests for the IMS 5 GASP Assessment criteria.

GASP 1: Complete

GASP 1 Test 1 (Overall #1): IMS Detailed, Discrete, and Milestone Task Counts

- Overview: Examine the depth of planning relative to the program.
- Criteria: None, The test is a subjective assessment to determine if the IMS contains all of the tasks needed to completely define the program.
- Filter: Apply Five (5) independent filters, sequentially one at a time:
 1. Detailed: Non- Summary (Omit In Primavera Test, NA) (N_Detail)
 2. Discrete: Non-Summary, Non-Milestone, Non-LOE (N_Discrete)
 3. Milestone: Equals Milestone (zero duration) (N_Milestone)
 4. Planning Packages: Equals Planning Package (N_Planning Package)
 5. Schedule Visibility Tasks (SVTs) – If any.
- Sort: NA
- Steps in Microsoft Project:
 1. Apply each filter sequentially one at a time and count results for each.
 2. Repeat for each filter outlined above.
- Steps in Excel:
 1. Data Verification. For the macros to process, line 4 must contain certain required information. A new line will need to be added if the existing line does not meet the requirement. Alternatively another line meeting the format required could be moved and inserted as line 4. Line 4 requirements:
 - a. Must have a “No” or “Yes” in Summary, SVT column. Beware if SVT column is partially filled; populate the blanks with “No”. [Hint, filter the column titled “SVT” for “Blank”. Type “No” in the first data cell and copy down to the end of the data. Remove the SVT filter and every row should have an SVT value of “Yes” or “No”. Repeat for the Summary field if needed)
 - b. It must also have “LOE” defined in the EVT column, or the schedule should not contain LOE tasks.
 - c. Turn on the auto-filter. Choose the Milestone Column 3 and filter for “Yes”. Examine column 5 duration results. Verify all milestones have zero duration. Impact – If test fails then filters requiring macros that filter milestones will need to be adjusted manually by selecting all milestones and then manual deselecting all zero duration tasks.
 - d. The following fields must be numeric formatted. If not select the column with the filters OFF and choose “Format – Numbers” [Hint – if unsure put auto-filters on. Go to the column in question and choose the drop down. Columns with numeric will have numeric options.]
 - i. Percent Complete
 - ii. Duration
 - iii. Baseline Duration

6630

Task Name	Milestone	%C	Duration
Sort A to Z		34.00%	1549d
Sort Z to A		100.00%	49d
Sort by Color		100.00%	0d
Clear Filter From "Milestone"		100.00%	0d
Filter by Color		100.00%	0d
Text Filters		100.00%	0d
Search		100.00%	0d
(Select All)		100.00%	0d
No		100.00%	0d
Yes		100.00%	0d

Selecting all Milestones.

OK Cancel

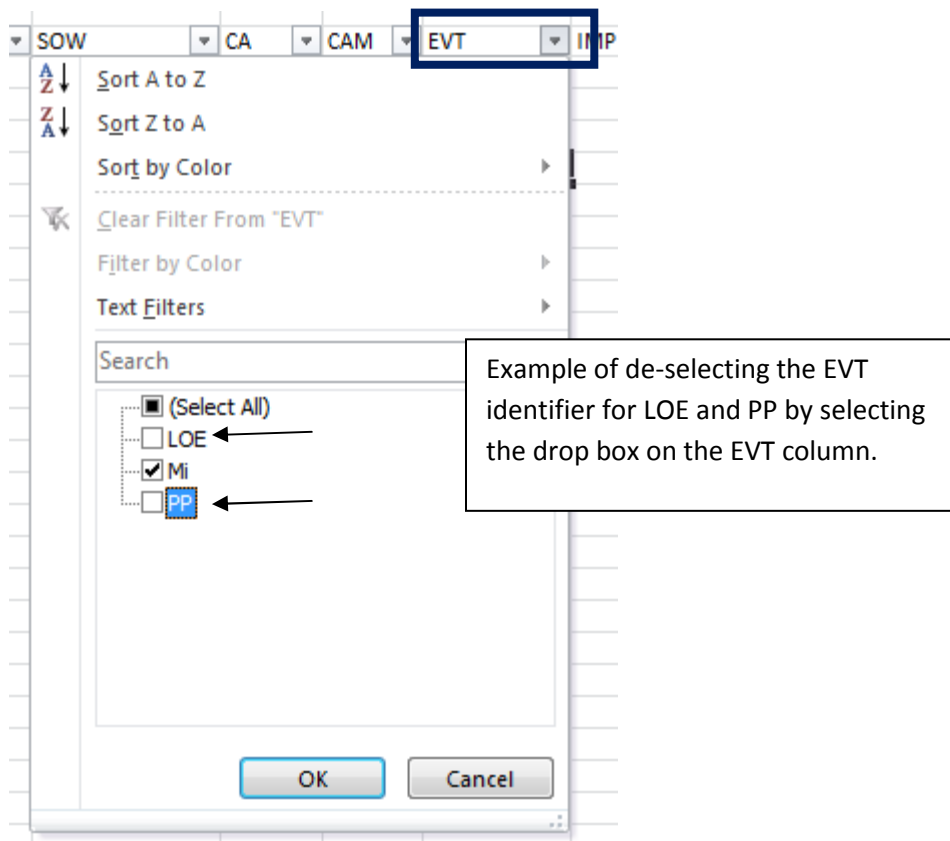
4 GR: From: MS 713 To: LB 8506 Contract Yes

Dron-Down

Will say "Number Filters" or "Text Filters" or "Date Filters" depending on the format of the date currently.

1	2	3	4	5.00	Total	6	7	8
Task Name	Milesto	%C	Duration		Early Start	Early Finish	Act Start	
1 Harris Corporation					10/31/2005	6/21/2010	10/31/2005	
6 Critical Path Milestones (SO					3/29/2010	4/15/2010	3/29/2010	
7 Key Hardware Transfer Mile					3/29/2010	4/15/2010	3/29/2010	
8 Automated Test Equipment					3/29/2010	4/15/2010	3/29/2010	
9 Deliver ATE to Navy (Dec 08)					3/29/2010	4/15/2010	3/29/2010	
10 SP Contract					10/31/2005	6/21/2010	10/31/2005	
11 Start Program					10/31/2005	10/31/2005	10/31/2005	
12 GFY09 Funding	Yes	100%	0.00		10/1/2008	10/1/2008	10/1/2008	

2. Setup. Re-verify the format contains the content in the same order as in the Introduction Section 3. Turn OFF the auto-filters. When complete execute the "N_Set" macro. This macro captures the file size in a static field for use within specific tasks. It then allows the filtered data to be compared with the total for a percentage result. This macro is run once before the first test only.
3. Verify the Early Finish, Actual Finish, and Baseline Finish are in MM/DD/YY format. If the data is in Day MM/DD/YY default text format, please run the BEI_Adjust_Dates macro that is described in Test 24 Excel Step 2. This converts all date formats used in the schedule check to MM/DD/YY.
4. The second filter is then executed "N_Detailed". Go to the EVT field or where LOE and planning package are defined. Choose the filter and un-choose (de-select) both LOE and planning packages. The example below classified LOE as "LOE, and planning packages as "PP" (actual classifications will vary by program so this step is repeated manually and not a step in the macro)



5. The results to the detailed filter step 4 above are shown below. Each result is similar. The cell B1 contains the filtered test result. Cell G1 contains the static total unfiltered amount For this example 7096 of the tasks were non-summary out of 8043. This equates to 88% detailed and 12% are summary tasks.

Task Count	7096					Total	8043
1	2	3	4	5.00	6	7	
UID	Task Name	Milestone	%C	Duration	Early Start	Early Finish	

6. Execute the third filter “N_Discrete”. Manually execute the removal of LOE. Document the results in terms of number and percentage in your notes.
7. Execute the forth filter “N_Milestone”. Document the results in terms of how many the IMS tasks are milestones with zero duration.
8. Execute the fifth filter manually. Turn all of the auto-filters off. Then turn auto filters on (resetting the auto-filter resets the criteria). Go to the EVT field in Column Q. Select the auto filter and choose the value that represents planning packages.

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	A	B	C	D	E	F	G	H	I	J	P	Q	R
1	Task Count	3							3217	0.1%			
3	UID	Task Name	Milestone	%C	Duration	Early Start	Early F	Act Start	Act Fin	Base Start	CAM	EVT	IMP
4	188988	Program Rebaseline Start Nov	Yes	100%	0d	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00		PP	
5	187353	9 Linear Regulator, assembly	Yes	100%	0d	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00		PP	
6	189065	IFF Antenna Non-Recurring	Yes	100%	0d	12/5/2011 17:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00	11/2/2009 8:00		PP	

- Execute the sixth filter manually. Turn the auto-filters off. Then turn auto filters on (resetting the auto-filter resets the criteria). Go to the SVT field in Column AA. Choose "Yes" from the drop-down box.

	A	B	C	D	E	F	G	H	I	J	AA	AB	AC	AD
1	Task Count	1							3217	0.0%				
3	UID	Task Name	Milestone	%C	Duration	Early Start	Early F	Act Start	Act Fin	Base Start	SVT	Summ	Est	Predessor
24	189213	Maintenance Training Code/Unit Test No		100%	4d	9/12/2011 8:00	11/5/2009 17:00	11/2/2009 8:00	11/5/2009 17:00	11/2/2009 8:00	Yes	No	No	NA

- How to Interpret: This is a general characterization test. There are no absolute criteria thresholds. General concerns would be if the schedule is not 70% or more characterized by discrete tasks. Also note if SVT is greater than .1%. These are tasks not in the PMB. See the IMS or IPMR DID for further definition.

Name: N_Detailed ☐ Show in menu

Filter:

Cut Row Copy Row Paste Row Insert Row Delete Row

And/Or

Field Name	Test	Value(s)
Summary	equals	No

☐ Show related summary rows

Help OK Cancel

Name: N_Discrete ☐ Show in menu

Filter:

Cut Row Copy Row Paste Row Insert Row Delete Row

And/Or

Field Name	Test	Value(s)
Summary	equals	No
And Milestone	equals	No
And Text27	does not contain	LOE

☐ Show related summary rows

Help OK Cancel

Name: N_Milestone ☐ Show in menu

Filter:

Cut Row Copy Row Paste Row Insert Row Delete Row

And/Or

Field Name	Test	Value(s)
Milestone	equals	Yes


☐ Show related summary rows

Help OK Cancel

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Name: ☐ Show in menu

Filter:

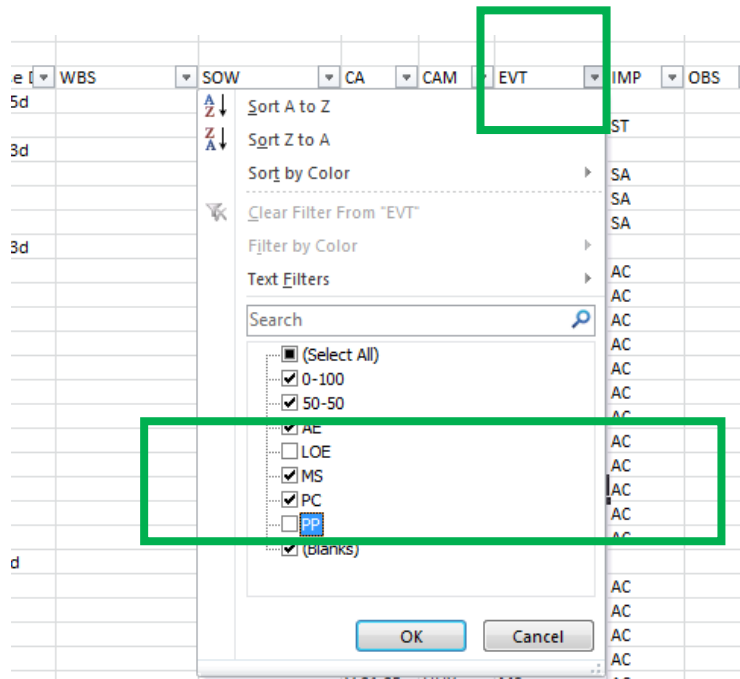
And/Or	Field Name	Test	Value(s)
	Text18 	equals	PP

☐ Show related summary rows

GASP 1 Test 2 (Overall #2): Percentage of Tasks with Baseline Durations Greater than 44 Work Days

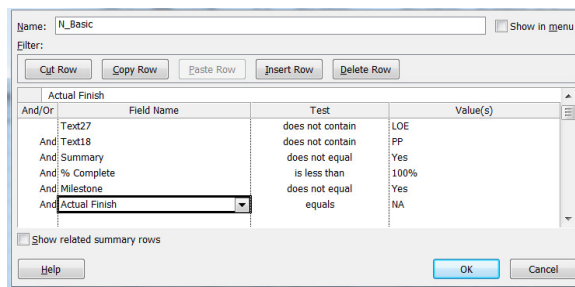
- Overview: This test identifies tasks with duration greater than 44 working days or more than two months long. It is difficult to assess progress for longer tasks so these may need to be broken into smaller tasks.
- Criteria: At least 95% of activities should have baseline durations less than or equal to 44 working days. [DCMA 14 point threshold]
- Filter: Non-LOE, Non-Planning Package, Non-Summary, Non-Completed, Non-Milestone (N-Basic)
- Sort: By Baseline Duration, highest to lowest value
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks that have baseline durations greater than 44 working days.
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks greater than 44 working days.
- 8) Steps in Excel:
 - 1) Filter the LOE and Planning packages manually.
 - 2) Turn off the Auto-Filter.
 - 3) Execute the N_Base_Basic macro. Do not capture the result, this set the totals to the incomplete remaining tasks and is the denominator for the percent calculations.
 - 4) MSP Source Data Only: Execute the “N_Basic” macro. The Baseline Duration field has been filtered for >44 days so cell B1 reflects the total tasks with baseline >44 days. Do not track the results yet as two filters will need to be applied manually (LOE and planning package). Record after filtering manually LOE and PP. Note: If the answer is no data turn off the Auto-Filters. Check the baseline duration column. If 0 value then the baseline duration has not been populated and this test is non-applicable.
 - 5) Non-MSP source data. If the schedule duration fields are already numeric, then this step is manual. Go to column E and then filter-numeric filters – Greater than 44

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6) The results in B1 and J1 are now reflective of the test results.

- 9) How to Interpret: It should be considered a finding if 5.01% or more of the tasks have a baseline greater than 44 working days. GASP Justification: The baseline is incomplete and not adequately planned (GASP 1). ANSI EIA 748 Guideline 6 Intent Guide **“There is a clear definition of what constitutes commencement and completion of each work package and planning package (or lower-level task/activity).”** Also discuss in CAM interview to find out what in detail is happening in next two months that is missing from the schedule (44 days is \geq two months).

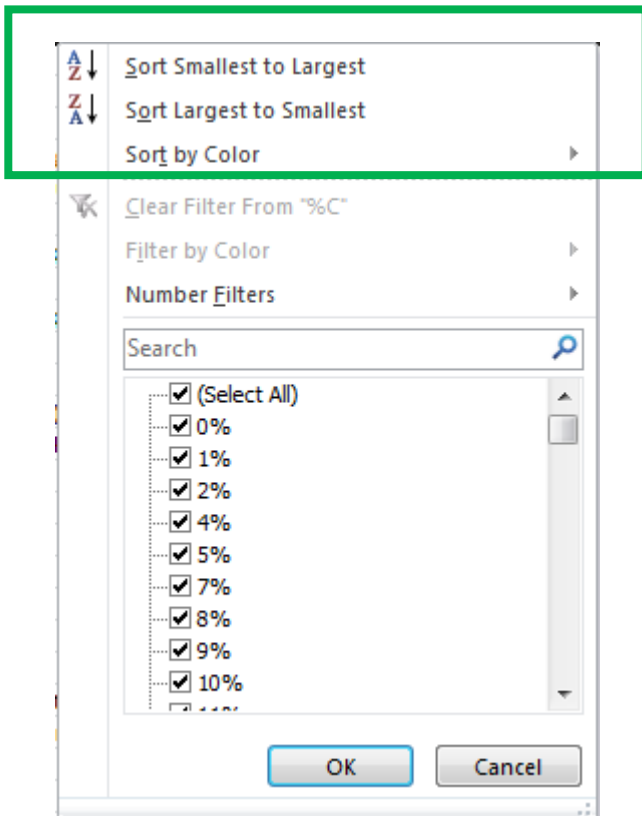


GASP 1 Test 3 (Overall #3): Percentage of Tasks with Forecast Durations Greater than 44 Work Days

- Overview: This test identifies tasks greater than 44 working days an which are more than two months long. It is difficult to assess progress for longer tasks so these may need to be broken up into smaller tasks.
- Criteria: At least 75% of activities should have forecast durations less than or equal to 44 working days.
- Filter: Non-LOE, Non-Planning Package, Non-Summary, Non-Completed, Non-Milestone (N_Basic)
- Sort: Sort by Forecast Duration, highest to lowest value
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks that have forecast durations greater than 44 working days.
 - 2) Divide this by the total number of tasks in this view, this reflects the percentage of tasks greater than 44 working days.
- Steps in Excel:
 - 1) Do not reset the filters. Execute the “N_Basic2” macro. The results reflect the forecast durations over 44 days. Manually re-filter the LOE and Planning packages.
 - 2) Write down the results reflected in cells B1, I1.
 - 3) After documenting the results, execute the “N_BasicFix” macro. This converts the total value back to the complete file. The durations will stay in numeric format.
- How to Interpret: The filter applied is the current short term detail (excluding planning packages and complete tasks). The threshold is lower for the Forecast than the Baseline as it is typically that tasks may slip in execution. Justification: Forecast incomplete and not adequately planned (GASP 1). ANSI EIA 748 Guideline 6 Intent Guide “**There is a clear definition of what constitutes commencement and completion of each work package and planning package (or lower-level task/activity)**”. Also this should be a focus in CAM interview to find out any detail effort that is happening in next two months (and missing from the schedule).

GASP 1 Test 4 (Overall #4): Complete Data Field Referencing in IMS

- Overview: A complete IMS is mapped to common integration fields. At a minimum, the Control Account (CA), CAM, IMP, WBS, SOW, EVT/Work Package/Planning Package should be mapped. It is recommended that Organizational Breakdown Structure (OBS) / Integrated Product Team (IPT) are also identified.
- Criteria: Optimally, all documents cross-referenced to the IMS are represented with their own field in the IMS. The CA, CAM, EVT, IMP, WBS and SOW fields must be included in the IMS structure. OBS/IPT are recommendations but are not requirements.
- Filter: Non-Summary, Non-Completed, Non-Milestone (N_Part)
- Sort: Sort user defined/code fields that contain the following, one at a time:
 - 1) CA
 - 2) CAM
 - 3) IMP
 - 4) WBS
 - 5) SOW
 - 6) EVT
 - 7) OBS or IPT
- Steps in MS Project: This tests the completeness of each field. For example, the CA, WBS, IMP and SOW fields should each be complete rational structures within each of these fields.
 - 1) Scroll through each field to determine if a consistent structure is present in the IMS.
 - 2) With the schedule filtered and sorted, count the number of tasks with empty fields.
Note: For the CA, CAM, EVT this step is omitted.
 - 3) For each, divide this by the total number of tasks in this view, reflecting the percentage of tasks missing references.
 - 4) For CA, CAM, EVT resort the field by CA designator. Each CA should have the CA and CAM designator, and each work package the EVT. Count any CAs without CAM and EVT designations, or any CAM/EVT without a CA designation.
- Steps in Excel:
 - 1) Execute the “N_Part” macro. Do not document the results yet as the rest of the filters are manual subsets.
 - 2) To sort a column while preserving the other row data following this process:
 - Choose the Auto Filter Icon for the field to sort by. The pop-up menu has sorting options.



- 3) For each of the seven fields determine which column the data resides in and sort as appropriate.
 - Control Account - Compare with RAM and verify by spot checking the complete control account is mapped. Each work package should be associated with a control account.
 - CAM - Compare with RAM and verify by spot checking that the complete control account is mapped. Each work package should be associated with a Control Account Manager.
 - IMP – Sort the schedule by IMP and verify it looks complete. If not, release the summary filter and verify.
 - WBS/SOW – These fields should be mapped completely with the summary filter off. If the SOW is not in the IMS it must be traceable. Typically this is through the WBS and Control Account.
 - EVT: Every work package should have an EVT. Focus on LOE and planning packages. The latter is required to represent the complete scope and LOE may also be included. However many of the checks need to omit these items if they are in the IMS.
 - OBS – Compare with RAM
 - IPT: Verify against IPT structure
- How to Interpret: Determination of a finding will depend on magnitude and type of problem. A finding would be based on the test results or require discussion with the CAM. For example, a missing CA, and WBS are absolute and findings if missing or not available in the IMS. IMP is required if on-contract. However the EVT is only required if LOE and if

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Apportioned Effort are in the schedule (they both must be separately identified from discrete). Even if not absolutely required, any missing fields would be recommended.

Name: N_Part ☐ Show in menu

Filter:

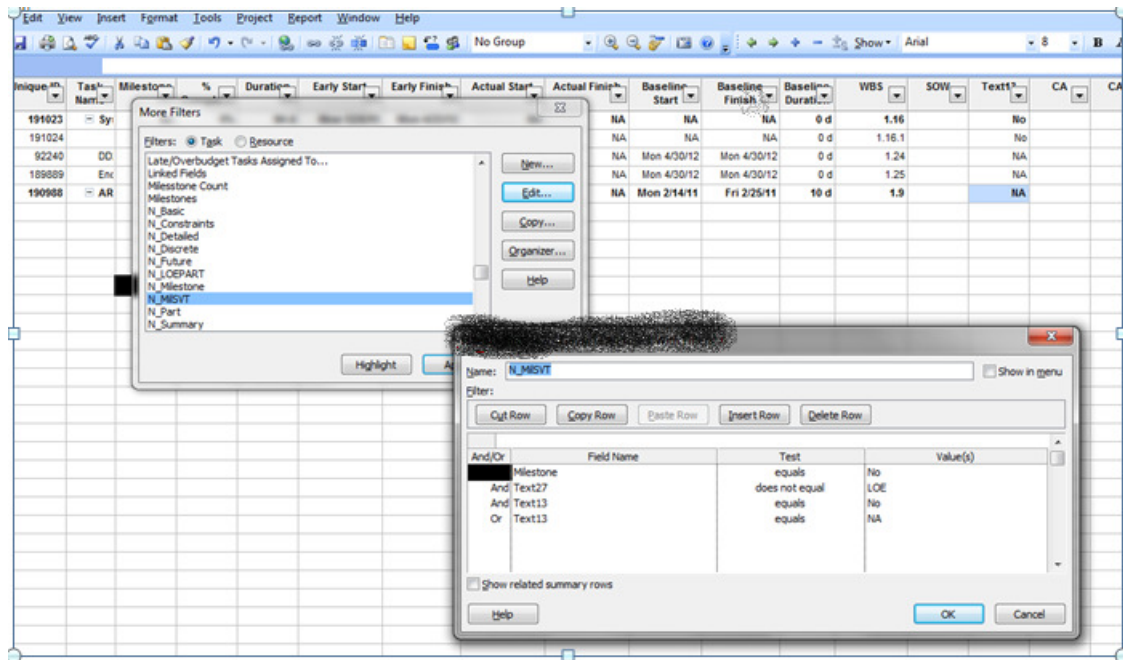
Milestone			
And/Or	Field Name	Test	Value(s)
	Summary	equals	No
And	% Complete	is less than	100%
And	Actual Finish	equals	NA
And	Milestone	equals	No

☐ Show related summary rows

GASP 1 Test 5 (Overall #5): IMS Tasks have Baseline Dates and Durations

- Overview: The schedule must be baselined for tracking purposes. In some tools, setting the baseline is a manual process.
- Criteria: All discrete and summary tasks must have baseline start/finish dates and baseline durations.
- Filter: Non-Milestone, Non SVT, Non LOE (N-MilSVT)
- Sort: NA
- Steps in MS Project:
 - 1) With the schedule filtered, scroll down and note any tasks that are missing a baseline start date, baseline finish date or baseline duration. The expectation is none are missing a baseline.
 - 2) Count the number of tasks noted with exceptions. Count one for each row missing one or more of the baseline elements.
 - 3) Divide this by the total number of tasks in the view.
- Steps in Excel:
 - 1) Execute the “N_MilSVT” macro.
 - 2) Manually filter out the LOE (if any has been identified in the IMS in test 4) [See Test 2 Excel step 2 for the “how-to” steps]
 - 3) Go over to columns J, K, L. Scroll down the file and note any tasks that do not have a baseline start, baseline finish, and baseline duration.
 - 4) Do not double count. Count the number of rows missing either of the baseline components. Divide by the value in B1 to calculate the percentage of the number of summary or discrete tasks as a percentage of the total.
- How to Interpret: This is a very broad filter including the past periods, future, and summary tasks. Every discrete or rollup task (MS Project) in the schedule should be baselined. It is a finding if a task in the IMS does not have a baseline. Justification. GASP 1 Complete not demonstrated, integration not demonstrated with scope, organization, or budget. Intent Guide 3: “The work tasks are assigned to a WBS and OBS and are traceable to the planning and budgeting system and the cost collection system. Establishment of unique coding structure facilitates the linkage between the planning, scheduling, budgeting, work authorization, cost accumulation, and performance measurement processes.”

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GASP 1 Test 6 (Overall #6): Estimated Durations (MSP Only)

- Overview: If using MSP, estimated durations are generated automatically if durations are not assigned to tasks and followed by a “?”. As a result, the network is calculated from inaccurate task durations. CAMs are responsible for estimating all schedule activities’ duration to avoid incomplete and inaccurate schedule data.
- Criteria: All discrete tasks have durations that have been adequately established (No estimated durations).
- Filter: Non-Summary, Non-Completed, No Milestone (N_Part)
- Sort: Sort by Estimated field
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks with ‘yes’, representing estimated durations.
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with unconfirmed durations.
- Steps in Excel:
 - 1) Execute the “N_Part” macro.
 - 2) Select the Auto Filter Icon in the Estimated Field Column AC. Sort on the estimated field.
 - 3) Count the number of yes rows. Divide by the number in cell B1.
- How to Interpret: This test is unique to MS Project. The tool automatically adds a ?1 day when a new line is inserted. The user is required to change this value to the expected duration by typing in the duration expected. It is considered a finding if the real duration has not been put into the system, because then the critical path is not accurately calculated. The GASP principal is the schedule is not complete; the discrete tasks are not complete. The Intent Guide 6 “The scheduling process documents and the resulting project schedule provide a logical sequence of work leading to a milestone, event, and/or decision point needed to ensure that the schedule supports the project objectives.”

GASP 1 Test 7 (Overall #7): Tasks with Duplicate and/or Blank Names

- Overview: Task names identify the required action and purpose that makes it unique from other tasks in a schedule. Consistent and clear task names increase the usability and effectiveness of an IMS. This test is also subject to security classification requirements, if any, exist on the contract. In some instances, security requirements restricts meaningful titles from being sent outside the secure facility. In this situation, the test may need to be accomplished at the contractor's facility.
- Criteria: All tasks should have unique task names (there are no blank or duplicative task names).
- Filter: Non-Summary (N-Summary)
- Sort: Sort by task name.
- Steps in MS Project: Two Options:
 - 1) Schedule Option
 - 1) Scroll through the field looking for duplicate task names or missing task names.
 - 2) With the schedule filtered and sorted, count and record the number of duplicate task names or missing task names.
 - 3) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with blank or duplicative task names.
 - 2) Excel Option
 - 1) Clear and reapply the filters
 - 2) Run the N_Summary macro
 - 3) Copy the filtered tasks names to a new Excel Worksheet and paste these in cell A1.
 - 4) Sort the new worksheet column A1.
 - 5) Insert the following formula in cell B2: `=IF(A2=A1,"True","False")`.
 - 6) Copy the formula down column B so it is identified for each row that has a task name.
 - 7) Filter in column B for any TRUE values to show tasks that have duplicate names.
 - 8) Count the number of TRUE values and add the number of observed missing task names.
 - 9) Divide this number by the total number obtained in the second step, reflecting the percentage of tasks with blank or duplicative task names.
- Steps in Excel:
 - 1) This test is manual.
 - 2) Turn Auto Filters off to reset the filters. Turn the Auto Filters back on.
 - 3) Go to the Summary column AB. Auto-Filter for "NO" only.

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Manually selecting the Summary Filter shown in cell AB3. The drop down shows the possible values, De-Select the "Yes" choice. Select OK.

- 4) Go to the Task Name column B.
- 5) Insert a blank column C.
- 6) Select all of the data and sort by the Task Name
- 7) Insert the following formula in cell C5: IF(A2=A1,"True","False")

The formula will need adjusted based on the first cell filtered in the spreadsheet

3	UID	Task Name	Milestone	%C	Duration
7	6430	DT 1 FF FQT Complete	Yes	100%	0.0
8	6431	DT 2 FF FQT Complete	(B4=B5, TRUE)	Yes	0%

In this example row 7 is the first row and row 8 is the second row (rows 4-6 where filtered out in the criteria). So the formula is placed in cell C8 and adjusted to be =IF (B8=B7, TRUE)

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- 8) Write down the number in the B1 cell. This will be the denominator.
- 9) Copy the formula down column C so it is identified for each row that has a task name.
- 10) Select the Auto-Filter for column C and select TRUE values to show tasks that have duplicate names.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Task Count	476			Total Task Count	5217														
Task Name		Milestone	%C	Duration	Early S	Early F	Act Start	Act Fin	Base Start	Base Finish	Bas D	WBS	SOW	CA	CAM	EVT	IMP	OBS	
190496 Analysis	TRUE	No	25%	25	3/24/2011 8:00	4/27/2011 17:00	3/24/2011 8:00	NA	12/1/2010 8:00	1/6/2011 17:00	20	1.26.1.2.2.9.10.3.3							
190503 Analysis	TRUE	No	20%	25	3/24/2011 8:00	4/27/2011 17:00	3/24/2011 8:00	NA	12/1/2010 8:00	1/6/2011 17:00	20	1.26.1.2.2.9.10.4.3							
190516 Analysis	TRUE	No	30%	48	3/9/2011 6:00	5/13/2011 17:00	3/9/2011 6:00	NA	12/1/2010 8:00	3/24/2011 17:00	75	1.26.1.2.2.9.10.6.2							

- 11) Count the number of TRUE values
- 12) Divide this number by the total number obtained in the step 8 above, reflecting the percentage of tasks with blank or duplicative task names.
- 13) When results are complete and documented delete column C added to put the formula in step 5 above.

- How to Interpret: This is a broad filter with past and future activities. Each task must be identifiable and have clear entry and exit criteria. Duplicative names are confusing and lead to inaccurate status. Justification: GASP 1 the schedule is not complete, duplicative tasks have been planned confusing scope. Intent Guideline 6 “There is a clear definition of what constitutes commencement and completion of each work package and planning package (or lower-level task/activity).

Name: N_Summary ☐ Show in menu

Filter:

And/Or	Field Name	Test	Value(s)
Summary		equals	No

☐ Show related summary rows

GASP 2: Traceable

GASP 2 Test 1 (Overall #8): Missing Logic (Predecessor/Successor)

- Overview: Logic ties in the IMS are fundamental for accurate schedule date calculations and critical path traceability. All discrete tasks, except end milestones, should have at least one predecessor and one successor, as even one missing logical tie could adversely affect a program's ability to successfully execute a contract.
- Criteria: All incomplete tasks, with a few exceptions, have predecessors and successors.
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: Sort for each of the following, one at a time:
 - 1) Predecessor field
 - 2) Successor field
- Steps in MS Project:
 - 1) Sort by Predecessor field.
 - 2) With the schedule filtered and sorted, the top or the bottom of the view should show any discrete task without an identified predecessor.
 - 3) Review tasks for the following criteria:
 - Are any of the tasks government GFX deliveries?
 - Are any of the tasks at the start of the program or a new ECP scope?
 - 4) For tasks that do not meet the above criteria, note any blanks (missing predecessors).
 - 5) Count and record the number of number of tasks missing predecessors.
 - 6) Sort by Successor field
 - 7) With the schedule filtered and sorted, the top or the bottom of the view should show any discrete task without an identified successor.
 - 8) Check tasks for the following criteria:
 - Are any of the tasks logical deliveries to the government/other contractors?
 - Are any of the tasks incremental contract deliveries?
 - 6) For tasks that do not meet the above criteria, note any blanks (missing successors).
 - 7) Count and record the number of tasks missing successors. Do not double count tasks that were already counted for not having predecessors.
 - 8) Add these two counts together to get a total.
 - 9) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with missing logic.
- Steps in Excel:
 - 1) Execute the "N_LOEPART" macro.
 - 2) Manually filter the LOE data out. See Test 2 Excel step 2 for "how-to" steps.
 - 3) Select the Auto Filer drop down for the Predecessor field, column AE. Select all (turn off) and scroll down to "Blank" to filter for blanks. If blank is not at the bottom then the return is null. When this is done cell B1 will have the total blanks.
 - 4) Review tasks for the following criteria:
 - Are any of the tasks government GFX deliveries?
 - Are any of the tasks at the start of the program or a new ECP scope?
 - 6) For tasks that do not meet the above criteria, note any blanks (missing predecessors). Put an "x" in column AG for the blank predecessor concerns.
 - 7) Count and record the number of number of tasks missing predecessors.

- 8) Select the Auto Filter drop down for the Successor field, column V. Select all (turn off) and scroll down to “Blank” to filter for blanks. If blank is not at the bottom then the return is null. When this is done cell B1 will have the total blanks..
 - 9) Check tasks for the following criteria:
 - Are any of the tasks logical deliveries to the government/other contractors?
 - Are any of the tasks incremental contract deliveries?
 - 10) For tasks that do not meet the above criteria, note any blanks (missing successors).
 - 11) Count and record the number of tasks missing successors. Do not double count tasks that were already counted for not having predecessors (items that were missing both a predecessor and successor) [Hint – in step 6 we added an X in column AG if counted as a missing predecessor? So omit any missing successor with an X to avoid double-counting]
 - 12) Add these two counts together to get a total.
 - 13) Turn on-off auto-filters. Remove any “x” s in column AG.
 - 14) Apply the N_LOEPART macro.
 - 15) Divide the total predecessor and successor missing logic concerns by the amount in cell B1, reflecting the percentage of tasks with missing logic.
- How to Interpret: Review all tasks missing logic and determine appropriate logic ties. The CAM should assess the assigned predecessor and/or successor. If one cannot be determined, then review the task to determine if it is required for program completion. Rationale should be documented for any tasks without logic ties. For example ignoring the beginning and the end of the IMS, typical tasks without a predecessor include GFX, or deliveries outside the scope of the contract. Tasks typically without successors include schedule margin on program events, and intermediate deliveries. Findings: 1) Any orphan task with no predecessor or successor; 2) Any non-expected tasks missing a predecessor or successor. The first type is a finding based on the data, the 2nd is typically verified in the CAM interview. The question to the CAM is either “Why does this task need to be completed this year?” (no successor) or “Why is this task not late and starting “date”?” (no predecessor) The typical answer is because of something else is required first and that is the missing predecessor. General Justification: GASP 2, the schedule did not demonstrate adequate horizontal traceability by missing predecessor or successors tasks. Intent Guide 6 “While no specific scheduling software is required, but there must be horizontal and vertical integration of the schedule through the framework of the WBS and OBS.”

Name: N_LOEPART ☐ Show in menu

Filter:

And/Or	Field Name	Test	Value(s)
And	Text28	does not equal	LOE
And	Summary	equals	No
And	% Complete	is less than	100%
And	Actual Finish	equals	NA

☐ Show related summary rows

GASP 2 Test 2 (Overall #9): Summary Tasks with Logic (MSP)

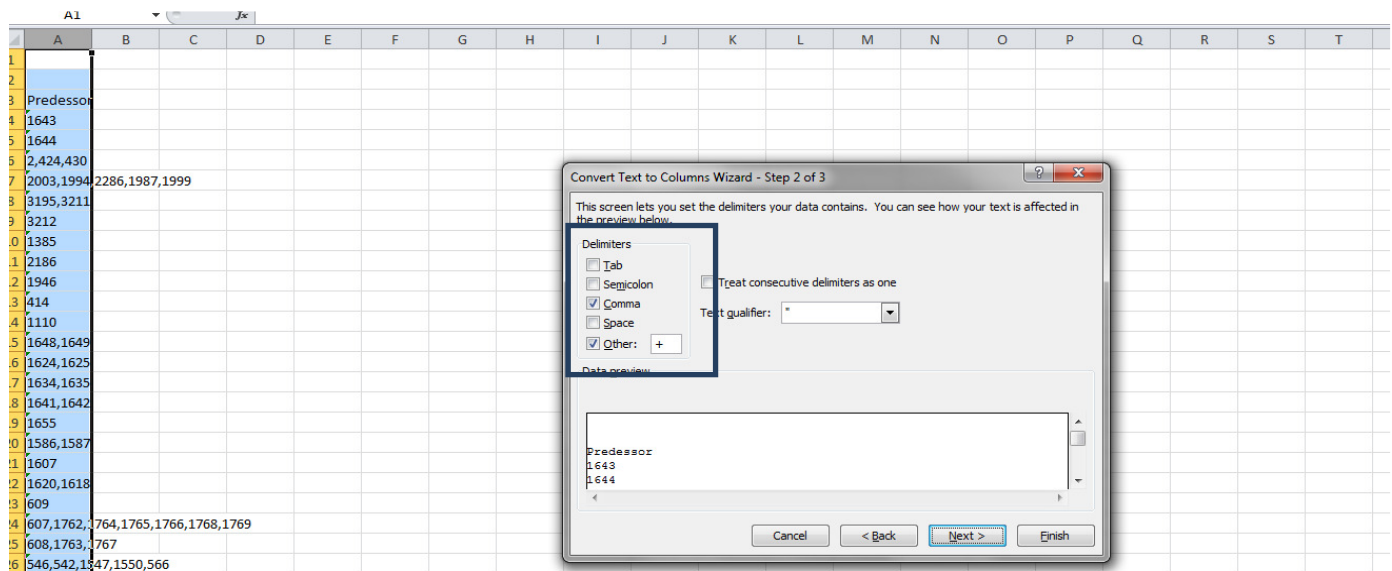
- Overview: If using MSP, summary tasks are located above the work package level, and summarize tasks at the performance level. Summary tasks with logic assigned can distort the schedule and should be avoided.
- Criteria: No summary tasks should have logic
- Filter: Non-Complete, Summary tasks (N_SumNonC)
- Sort: Sort for each of the following, one at a time:
 - 1) Predecessor field
 - 2) Successor field
- Steps in MS Project:
 - 1) Sort by Predecessor field.
 - 2) With the schedule filtered and sorted, each summary task displayed should be blank in the predecessor field.
 - 3) The top or the bottom of the filtered sort should show any summary task with a predecessor.
 - 4) Count the summary tasks with Predecessors.
 - 5) Re-sort by Successor field.
 - 6) With the schedule filtered and sorted, each summary task displayed should be blank in the successor field.
 - 7) The top or the bottom of the filtered sort should show any summary task with a successor.
 - 8) Count the summary tasks with successors. Do not double count summary tasks that were already counted for having predecessors.
 - 9) Add these two counts together to get a total.
 - 10) Divide this by the total number of tasks in this view, reflecting the percentage of summary tasks with a predecessor/successor.
- Steps in Excel:
 - 1) Execute “N_SumNonC” macro
 - 2) Select the Autofilter Drop Down in the Predecessors Column AE. Exclude any blank lines (for most projects the results may be blank output).
 - 3) Count the lines with a predecessor and put an “x” in column AG. .
 - 4) Select the Autofilter Drop Down in the Successor Column V.
 - 5) Count the summary tasks with successors. Do not double count tasks that were already counted for not having predecessors (items that were missing both a predecessor and successor) [Hint – in step 6 we added an X in column AG if counted as a missing predecessor? So omit any missing successor with an X to avoid double-counting]
 - 6) Add these two counts together to get a total.
 - 7) Turn on-off auto-filters. Remove any “x” s in column AG.
 - 8) Apply the N_SumNonC macro.
 - 9) Divide by the number in cell B1. This is the percentage of to go summary tasks with predecessors and/or successors.
- How to Interpret: Summary tasks only exist in MS Project. Other tools create summaries based on alternate structures. The harm is if links exist both on detail and summary tasks the logical float calculations may be distorted. Linkage is required at the work package level in the NDIA Intent Guide. The finding is either the summary and detail have competing logic (predecessor or successor) or if the summary level only has the logic and it is not a work

package. Justification: GASP 2 traceability not demonstrated. Horizontal integration not complete (links on both the summary and detail) or not adequately defined (not work package level). Intent Guide 6 “While no specific scheduling software is required, but there must be horizontal and vertical integration of the schedule through the framework of the WBS and OBS.” And “Significant interdependences should be defined at a consistent level of detail to support development of a critical path. The minimum level linkage is at the work package and planning package level.”

And/Or	Field Name	Test	Value(s)
	Summary	equals	Yes
And	% Complete	is less than	100%
And	Actual Finish	equals	NA

GASP 2 Test 3 (Overall #10): Percentage of Tasks using Finish - Start Relationships

- Overview: FS represents a finish to start relationship, meaning task two (successor task) starts when task one (predecessor task) finishes. FS relationships are the most common and usually fit the majority of real world circumstances.
- Criteria: At least 90% of incomplete tasks are logically tied with FS relationships.
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: Sort by the predecessor field
- Steps in MS Project: Depending on the software, this test may need to be accomplished in Excel using the Data – Text to Column function (MS Project keeps the relationship in the predecessor field that will need split in Excel)
 - 1) With the filter and sort applied copy the unique ID and Predecessor fields from MS Project to Excel.
 - 2) Choose the column with the predecessor field. Choose the Data-Text To Columns command. Choose delimited and then the comma and other “+” options – see below



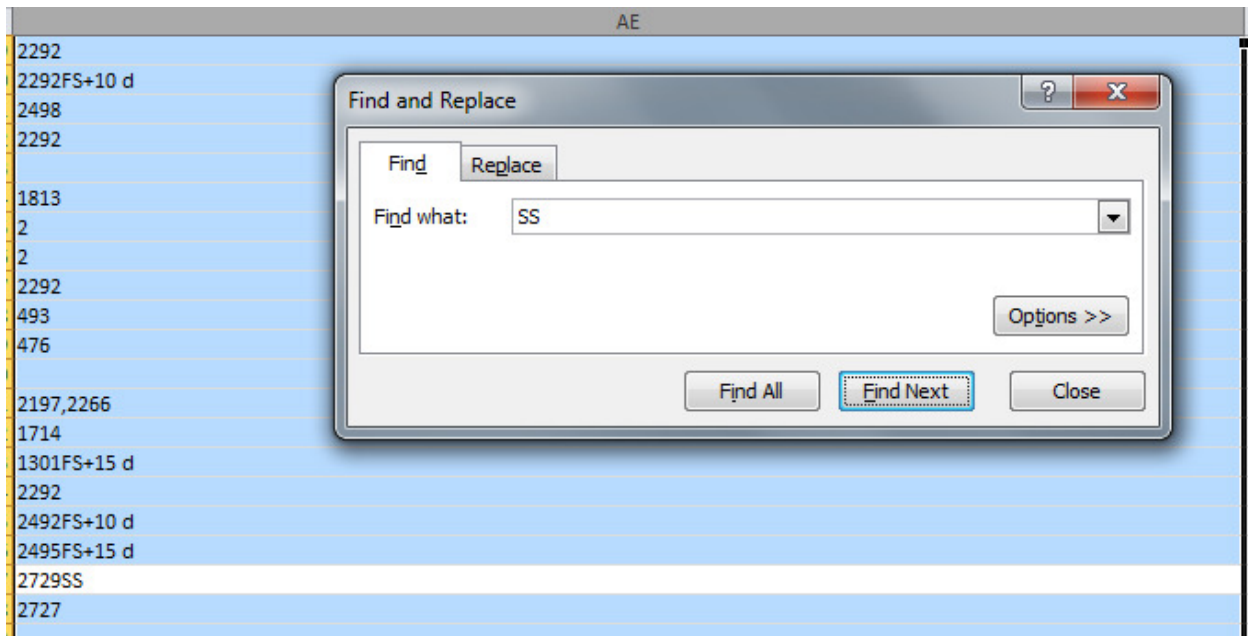
- 3) The results will vary by the number of predecessors a particular task had. For examples 6 predecessors will split into six columns. The filter is also breaking the lags into another column creating even wider fields.
- 4) Select the Predecessor column AE. Using the Home-Find&Search menu – Search and count the number of finds of the following:
 - “SS”
 - “SF”
 - “FF”

- 5) Do not count doubles, if one line has several “SS’ for example.

- 6) Divide the total number by the total lines in MS Project view as filtered. This is the percentage of tasks with non Finish-Start relationships.

- Steps in Excel:

- 1) Execute the “N_LOE Part” macro
- 2) Go to the field with the “LOE” identified and filter to remove the “LOE” (see Test 2 Excel step 2 for “how-to” steps). Document the number in cell B1. This is the denominator for the percentage in this test.
- 3) Go to the last column the second predecessor field in column AE. Copy this column to a new worksheet. Paste in column A of the new worksheet.
- 4) Select the entire column in the new worksheet.
- 5) Using the Home – Find command – Search and count the number of finds of the following:
 - “SS”
 - “SF”
 - “FF”



Example of searching and finding “SS” in the predecessor field.

- 6) Do not count doubles, if one line has several “SS’ for example it counts as one.
- 7) Divide the total number by the total lines in the Assessment worksheet cell B1. This is the percentage of tasks with non-Finish-Start relationships. Subtract from 1 to get the percentage of work that uses FS type relationships.
- 8) Do not clear the filters.

- How to Interpret: A FS relationship is logical. Task 1 must finish before task 2 begins. Other relationships such a Finish-Finish (FF), Start-Finish (SF) or Start – Start (SS) are more unusual.

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Any use of SF is questioned, that is task 1 must start before task 2 can finish which is the exact opposite of FS and practically impossible. SS and FF may be used infrequently to model special circumstances. However the expectation is 10% or less. If excessive the result is a finding. The justification is GASP 2 traceability is not demonstrated. The tasks are not logically linked and inadequate horizontal integration demonstrated. Intent Guide 6 “The schedule describes the sequence of work and should consider the significant interdependencies that are indicative of the actual way the work is accomplished.”

The screenshot shows a dialog box titled "NLOEPART" with a "Show in menu" checkbox. Below the title bar is a "Filter:" label and a row of buttons: "Cut Row", "Copy Row", "Paste Row", "Insert Row", and "Delete Row". The main area contains a table with the following data:

And/Or	Field Name	Test	Value(s)
Actual Finish	Text28	does not equal	LOE
And Summary		equals	No
And % Complete		is less than	100%
And Actual Finish		equals	NA

At the bottom of the dialog, there is a checkbox labeled "Show related summary rows", a "Help" button, and "OK" and "Cancel" buttons.

GASP 2 Test 5 (Overall #11): Total Float > 44 Work Days

- Overview: Total float (or Slack) indicates a task's relationship to the critical path. Tasks with high float values, greater than 44 working days, may be indicative of insufficient predecessor or successor logic ties.
- Criteria: At least 95% of incomplete tasks have less than 44 working days of float.
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: Sort by Total Float (or Slack) field
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks with more than 60 working days of float.
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with more than 44 working days of float.
- Steps in Excel:
 - 1) Execute the "N_LOEPART" macro. (may omit if filters were not cleared, go to step 3)
 - 2) Go to the field with "LOE" identified and exclude the "LOE" manually. See Test 2 Excel step 2 for the "how-to" steps.
 - 3) Go to the Total Float /Slack column X. Insert a new column after Total float.
 - 4) Highlight the data in the total float field column X. Choose the Data-Text to Columns command. Choose the "delimited" option and then further specify options for "space" only. Click next-finished when complete. See below.

Task Count	796	Total Task Count	3217
Unique	Task Name	Milestone	%C
190224	Bench test / No		0%
93190	Customer ve No		0%
190576	Document S No		0%
190155	Dry Run / Re No		0%
190813	PHM End-to-No		0%
190809	PHM Engine No		79%
92683	REG SQT Ber No		0%
188985	Release COF Yes		0%
188984	Release PHF Yes		0%
94114	Safety Asse: No		8%
93193	Validate Col No		0%
93512	Validate Sig No		0%
94189	Inspection/ No		0%
93916	Government No		0%
190599	High Current No		41%
94188	Inspection/ No		20%
190597	Linear Regu No		39%
190598	Multi Voltag No		40%
190311	Peer / Mana No		0%
190307	Peer and Mz No		75%
92681	REG SQT Ber No		0%
190310	Revise base No		0%
186845	Submit and No		0%
190317	WPI No		0%
190313	WPI with Cu No		0%
93071	60% IPR No		0%

The column without a title is the new column added next to float. The float field is select by selecting X4, holding the shift key and pressing the end-down keys. With the data selected choosing the Data – Text To Columns and complete as shown in the wizard to the left.

- 5) Select the drop-down in Column X Total Float Field. . Choose "Numeric filter – Greater than – 44"
- 6) Write down the answer in B1
- 7) Execute the "N_LOEPART" macro
- 8) Divide the total by the amount in cell B1. The result is the percent of tasks with float greater than 44 days.

- 9) Delete the added column in step 3. Hint – The columns in row 2 are labeled 1-31. Any column with a row 2 blank value is the one to be deleted for the macro's to run correctly. The macros assume the standard file configuration.

In the example highlighting the lines with float greater than 44 days, yields a count in the lower right of 606. Cell B1 is 796 from the results of the filter. $606/796$ equals 76% of the tasks have excessive float over 44%

- How to Interpret: Float is calculated off the working schedule to the next constrained task. Float is the amount of time that a task can slip without slipping the critical path. Logically a task with greater than 44 days of float is not a current priority to accomplish. There are about 20 working days in a month so this task is not required for 2 months or more. This is an item for CAM discussion. The CAM should be able to explain why the task cannot slip and be planned X months in the future. If the explanation is something else, it is a missing successor typically. If the CAM explains instead for example with a resource profile or risk mitigation that it is required to reduce resource or total risk that might be acceptable. Typically it is a finding based on the CAM interview if it is judged by the surveillance lead to be caused by a missing link or CAM error. Additionally the magnitude is a driver in the analysis. Float of over 100 days is typically a broken relationship that was not fixed and is an error. If the assessment is a finding the justification is GASP 2 traceability not demonstrated. The horizontal integration is inadequate as successors were missing. Intent Guide 6 “The schedule describes the sequence of work and should consider the significant interdependencies that are indicative of the actual way the work is accomplished.”

GASP 2 Test 6 (Overall 12): Total Float Less than negative 10 Work Days

- Overview: Total float (or Slack) indicates a task's potential to being on the critical path. Tasks with negative float values, less than negative 10 working days, may be indicative of a date constraint in the schedule that is unachievable.
- Criteria: None of incomplete tasks should have less than (10) working days of float.
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: Sort by Total Float (or Slack) field
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks with more negative float less than negative 10 working days of float.
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks excessive negative float.
- Steps in Excel:
 - 1) If the Test 11 results have been kept use the same results and do not turn off the filter. If the test is being started over repeat Test 11 Excel steps 1 and 2.
 - 2) Select the drop-down in Column X Total Float Field. . Choose "Numeric filter – Less than -10 (minus 10)
 - 3) Write down the answer in B1
 - 4) Execute the "N_LOEPART" macro
 - 5) Divide the total by the amount in cell B1.

In the example sorting the Total float smallest to largest, resulted with 0 days in X4. This indicates that there is nonegative float in the sample data and the result is 0%.

6) Remove the extra column before execution of the next test.

- How to Interpret: Excessive negative float is fixed by changing the constraint date out in time and forecasting a slip. Negative float when excessive means a contract milestone may not be achievable. This finding is verified through CAM interviews. Negative float greater than 10 working days without corrective action to recover is inadequate. This is a two week slip which is typically significant. The finding is that the forecast constraint is not accurate or updated. GASP 2 traceability is not demonstrated. The horizontal logic is inadequate and prohibiting a potential slip to a constraint to be forecast. Intent Guide 6 "The schedule provides current status and forecasts of completion dates for all discrete authorized work."

GASP 2 Test 7 (Overall #13): Tasks Using Constraints that Delay Forecast Start or Finish Dates

- Overview: Constraints are restrictions set on the start or finish dates of tasks. Some types of constraints delay the forecast start or finish dates. These are commonly known as soft constraints. These types of constraints may be used to fine-tune a logic-driven schedule based on factors such as component delivery, near term resource availability, facility availability or contractual obligations. However, excessive use of constraints prevents the schedule from being logic-driven.
- Criteria: Less than 5% of incomplete tasks utilize constraints that delay forecast start or finish dates.
- Filter: Non-LOE, Non-Summary, Non-Completed (N-LOEPART)
- Sort: Sort by Constraint Type field
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, count the number of tasks with constraints that delay the forecast start or finish dates. This are Start No Earlier than (SNET), Finish No Earlier Than (FNET).
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with constraints that delay the forecast start or finish dates.
 - 3) Review tasks to determine if use of constraints is reasonable.
- Steps in Excel:
 - 1) If the Test 12 results have been kept use the same results and do not turn off the filter. However manually remove any filters on the Float column from the previous test, if any. Also delete any added columns from the previous tests [hint – row three has column numbers, there will be a gap if a column was inserted. If the test is being started over repeat Test 11 Excel steps 1-3.

	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
20	21	22	23	24	25	26	27	28	29	30	31		TH Incomple
	Pred	Succ	Con Type	Floa		Lag	Notes	SVT	Sum	Est	Dead	Predessor	

Example where column Y was added in previous step next to the float column. The original column numbers are on row three and column Y is blank. This indicates a column that should be deleted.

- 2) Select the Auto-Filter drop down in the Constraint Type field, Column W. Filter separately for Start No Earlier Than or Finish No Early Than.

Complete Tasks 1037 BEI Baseline Count

U	V	W	X	Y
20	21	22	23	24
Pred	Succ	Con Type	Float	Lag

Sort A to Z
Sort Z to A
Sort by Color
Clear Filter From "Con Type"
Filter by Color
Text Filters
Search
☒ (Select All)
☒ As Soon As Possible
☒ Start No Earlier Than

By selecting on the filter button of column W the Constraint Type, in the lower box will list all of the constraint types. In the example there are SNET and no FNLT constraints

4 C:\Users\ As Soon As Possible
25 As Soon As Possible
4 C:\Users\ As Soon As Possible
27 As Soon As Possible

- 3) Count all SNET or FNET type constraints.
- 4) Divide by the total in cell B1. The result is the percentage of tasks with a soft constraint.

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Task Count	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	IJ	JK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	IJ	JK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	IJ	JK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW
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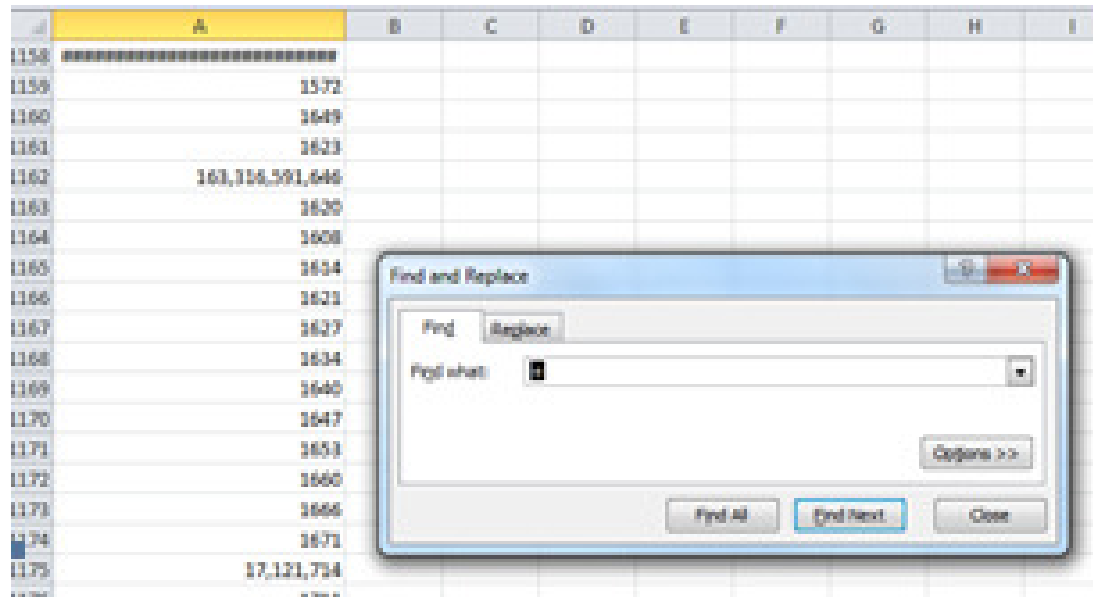
This example illustrates counting the SNET and FNET tasks. The sample data was 169 tasks out of 796 which equals 21%.

- **How to Interpret:** There are some valid uses of constraints that delay the forecast start or finish dates. Use of constraints should be minimized and considered on a case-by-case basis. Consider removal of these constraints to allow for the precedence logic to determine dates, where practical. Review the type of tasks with constraints. Are the ones with finish constraints logical end points (Program Events such as CDR or TRR) or intermediate or final deliveries? If excessive or not logical then issue a finding. Also if the constraint is not justified it should not be used. If a finding GASP 2 transparency is not demonstrated. Intent Guide 6 “The scheduling process documents and the resulting project schedule provide a logical sequence of work leading to a milestone, event, and/or decision point needed to ensure that the schedule supports the project objectives.”

GASP 3: Transparent

GASP 3 Test 1 (Overall #14): Tasks with Leads

- Overview: A lead allows a successor task to start before the predecessor is complete. This is represented by a negative lag value in combination with a predecessor relationship, such as “FS-1day”. Leads should be used in only rare circumstances. Although leads of one day are acceptable, lead values greater than this should be avoided.
- Criteria: No incomplete tasks should have lead (less than 0 in MS Project).
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: Sort by the Lead or Predecessor field. In some scheduling tools, a lead is included in the relationship field or may require more of a manual check.
- Steps in MS Project: MS Project combines the lag field in the predecessor column
 - 1) If the results from Test 10 have been kept and a separate worksheet exists with the predecessor split into different columns then continue. If not repeat MS Project steps 1-3 before continuing.
 - 2) Go to the worksheet with the predecessor split by the Text to Columns command results.
 - 3) Count the number of tasks with leads displayed as –X days. The recommended method with widely different row lengths is to combine this search with Test 15.
 - Choose the Home – Find command. Choose “d” which will find all positive lag or negative leads.
 - One find at a time capture
 - Items that show “X d” where $X > +20$ days. This is an excessive lag and the results of Test 15.
 - Items that show “X d” where $X < 0$ days (negative). This is a lead and the result of Test 14.
 - 4) Divide the number of leads in step 3 above by the number of tasks in this view, reflecting the percentage of tasks with leads.
- Steps in Excel:
 - 1) Using the same tab you used Test 10 F-S , go to the top of this tab.
 - 2) Do a find and search for “+”.
 - 3) Manually count the number lines values over 20 days. Do not sort by any column. Continue the find until the first line with a “+” is re-found.



4)

- Goto the other tab with predecessor data only copied in the first step. Repeat with “-” to find the negative leads. This time you can sort on column B, any lead is a finding regardless of how many leads are within a task.
- 5) Divide the number of leads in step 3 above by the Assessment Worksheet cell B1 result, reflecting the percentage of tasks with leads.

- How to Interpret: In MS Project, a lead is a negative value. Logically a lead with a negative value equal to the duration reverses the logical FS relationship for example. A lead can typically be used to crash the schedule inappropriately. Therefore the expectation is to have no use of leads in the schedule. The finding, if any, would be GASP 3 Transparency not demonstrated. The schedule is not predictive and distorted. Intent Guide 6 “The schedule provides current status and forecasts of completion dates for all discrete authorized work.

GASP 3 Test 2 (Overall #15): Tasks with Excessive Lags

- Overview: A lag forces a delay to a successor task. This is represented by a positive duration value in combination with a predecessor relationship, such as “FS+60days”. Lags should be used sparingly to reflect wait times and not work effort. Lags should not be used to achieve a pre-determined start date. Higher lag values are more difficult to manage.
- Criteria: No incomplete tasks should have lag values greater than 20 working days.
- Filter: Non-LOE, Non-Summary, Non-Completed (N_LOEPART)
- Sort: See Test 14
- Steps in MS Project:
 - 1) This was accomplished in Test 14. Take the excessive lags result from step 3 in test 14 divided by the same total in Test 14 step 5. The result is number of excessive lags as a percentage of the future plan.
- Steps in Excel:
 - 1) This was accomplished in Test 14. Take the excessive lags result from step 3 in Test 14 divided by the same total in Test 14 step 5. The result is number of excessive lags as a percentage of the future plan.
- How to Interpret: A lag greater than 20 working days is greater than one accounting month. A lag represents a missing task not in the baseline such as a customer 30 calendar day review of a document. A lag essentially extends the duration of the task and says the successor(s) must be delayed. This is a finding GASP 3 Transparency was not demonstrated. Intent Guide 6 “ The scheduling process documents and the resulting project schedule provide a logical sequence of work leading to a milestone, event, and/or decision point needed to ensure that the schedule supports the project objectives.

GASP 3 Test 3 (Overall #16): Documented Use of Constraints, Deadlines, Leads and Lags

- Overview: Any appropriate use of constraints, deadlines (MSP specific), leads or lags require documented justification in the schedule.
- Criteria: No incomplete tasks have undocumented deadlines, constraints, leads or lags.
- Filter: Non-LOE, Non-Summary, Non-Completed AND constraints OR deadlines OR leads OR lags (N_Constraints). [Note MSP does not have leads/lags as a field that can be selected]
- Sort: Constraint and Notes fields or user defined documentation field
- Steps in MS Project:
 - Sort by the Constraint type field. Compare the results next to the notes field (or the equivalent) for all tasks with a constraint that does NOT equal As Soon as Possible (ASAP) or as late as possible (ALAP).
 - Divide this by the total number of tasks in this view, reflecting the percentage of constraint tasks without documented justification.
 - MSP only. To find the lead/lags you will need to display the predecessor field next to the notes field. Expand the predecessor field as wide as available. Manually compare the notes field with any task with any lead or lag.
 - Divide by the total, reflecting the amount of lead and lag tasks without documented justification.
- Steps in Excel:
 - Execute the “N_Constraints” macro
 - Select the Auto – Filter dropdown in the EVT column or where LOE is identified and change the filter to exclude. (See Test 2 Excel Step 2 for “how-to” steps.)
 - Go to the Notes Field Column AA or Z (depending on if the added column in Test 14 was removed).
 - Select all of the Data. Select Data- Sort function and sort by the Constraint type field. Compare the results next to the notes field (or the equivalent) for all tasks with a constraint that does NOT equal As Soon as Possible (ASAP) or as late as possible (ALAP).

Task Count	796	Total Task Count	3217						
Unique	Task Name	Milestone	%C	Duration	Succ	Con Type	Notes	VT	Sur
190618	Build Prep	No	0%	108	707	Start No Earlier Than			No
94062	BSC & REC CBI No		0%	20	2106,209	Start No Earlier Than	BSC & REC SW not ready to test on roof. Pred 94067. - Badik		No
94067	RCSP CBM Inti No		46%	40	2099,209	Start No Earlier Than	Didn't get any bench shifts on RCSP Shift. - Badik		No
187286	Conduct RCSP No		27%	352	424,437	Start No Earlier Than			No

In the example, compare any non-ASAP or ALAP constraint to see if the notes field is utilized.

- Divide the total number of lags not justified by the amount in cell B1, reflecting the percentage of constraint tasks without documented justification.
- MSP only. To find the lead/lags you will need to display the predecessor field next to the notes field. Expand the predecessor field as wide as available. Manually compare the notes field with any task with any lead or lag.

Task Count																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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In the example, compare any line with any lead or lag (+/-) value after the relationship and see if a notes has been captured

- 7) Divide the total number tasks with lead or lags by the amount in cell B1, reflecting the percentage of lead and lag tasks without documented justification.
- How to Interpret: Constraints, deadlines, leads and lags distort the schedule float and critical path calculations. These should be used with great care and rationale for their use should be documented. Findings if any, are based on CAM discussions. A constraint/deadline regardless of type must always be required and represent a logic requirement. Lead or lags are typically missing tasks external to the PMB. Therefore it is logical that any use should be easy to document. The justification may be a code with a look-up table or complete narrative. The finding is when no documentation of any form exists. GASP 3 Transparency is not demonstrated, documented assumptions are missing. Intent Guide 6: “The scheduling process documents and the resulting project schedule provide a logical sequence of work leading to a milestone, event, and/or decision point needed to ensure that the schedule supports the project objectives.” Also the IMS DID 2005 states “2.4.1.10 Lag. An interval of time that must occur between a predecessor and successor task/activity or milestone. Since negative time is not demonstrable, negative lag is not encouraged. (Note: Lag should not be used to manipulate float/slack or constrain schedule.)” and “(Note: Certain types of constraints should be used judiciously because they may impact or distort the network critical path.)”

Name: N_Constraints ☐ Show in menu

Filter:

And/Or	Field Name	Test	Value(s)
Deadline			
Text27		does not equal	LOE
And Summary		equals	No
And % Complete		is less than	100%
And Actual Finish		equals	NA
And Constraint Type		does not equal	As Soon As Possible
And Constraint Type		does not equal	As Late As Possible
Or Deadline		does not equal	NA

☐ Show related summary rows

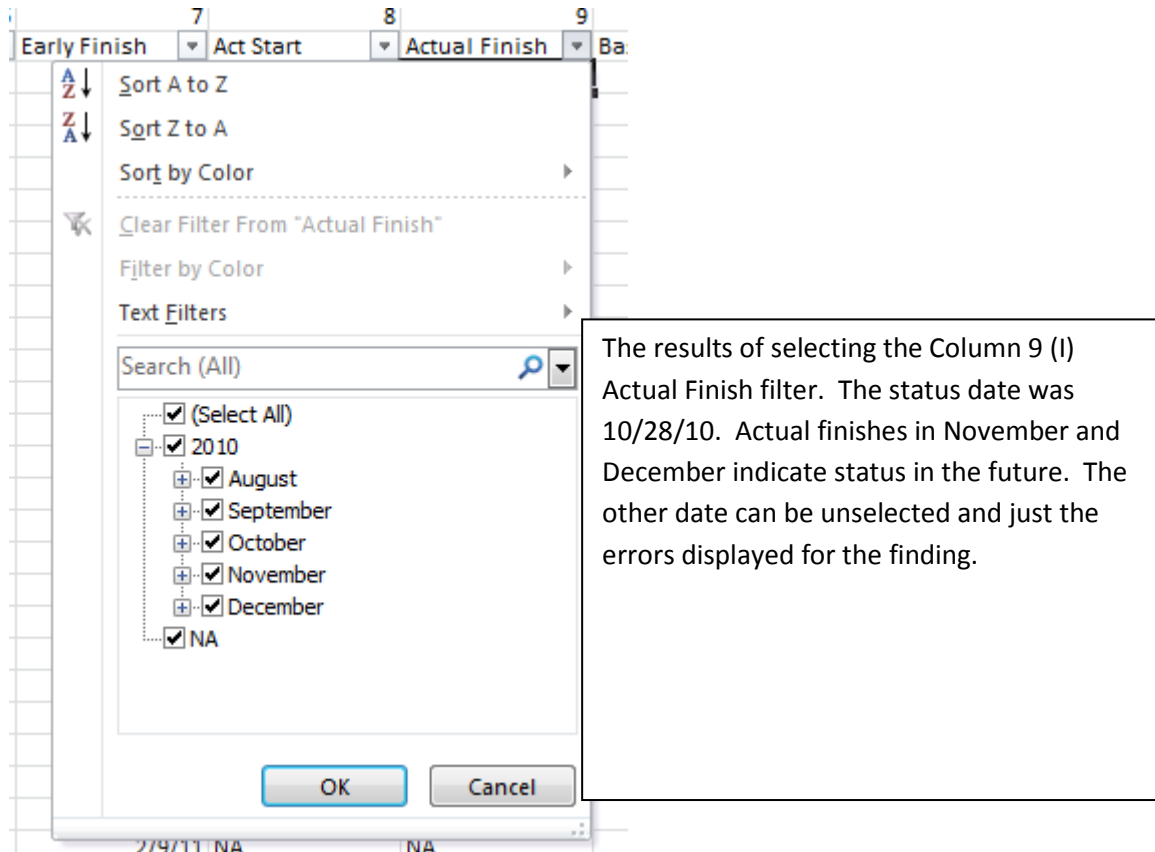
GASP 3 Test 4 (Overall #17): Constraints that Prevent Tasks from being Logically Driven

- Overview: Some constraints prevent tasks from being moved by their logical dependencies and do not transfer impacts to successor tasks. Therefore, they typically hinder the accuracy of a logic-driven schedule. These are commonly known as “hard” constraints.
- Criteria: No tasks with constraints preventing a logically driven schedule
- Filter: Non-LOE, Non-Summary, Non-Completed (N_Constraint)
- Sort: Constraint type field
- Steps in MS Project:
 - 1) This is a continuation of the Test 16 results. With the schedule filtered and sorted, count the number of tasks containing constraints that prevent a logically driven schedule. [FNLT, SNLT, Must Start On, or Must Finish On]
 - 2) Divide this by the total number of tasks in this view, reflecting the percentage of tasks containing constraints that prevent a logically driven schedule.
- Steps in Excel:
 - 1) This is a continuation of the Test 16 results. With the current filter and sort from Test 16, count the number of tasks containing constraints that prevent a logically driven schedule. [FNLT, SNLT, Must Start On, or Must Finish On]
 - 2) Divide this by the total in cell B1, reflecting the percentage of tasks containing constraints that prevent a logically driven schedule.
- How to Interpret: This is a finding based on data. A fixed constraint is one that can never be moved either early or late. They therefore distort the IMS as a predictive management tool. Exceptions – The last deliveries in the schedule and key events such as PDR and CDR are typically constrained with this type of constraint. All other instances are findings. The GASP justification is that the schedule traceability is not demonstrated, the schedule status and forecast ability is inhibited. The Intent Guide 6 “The schedule provides current status and forecasts of completion dates for all discrete authorized work.

GASP 4: Statused

GASP 4 Test 1 (Overall #18): Status In the Future (MSP)

- Overview: Assessing and recording progress and reflecting accurate remaining work effort should be consistent with the current status period to reflect meaningful schedule information. An Actual Start or Finish date in the future is invalid, as it has not yet occurred. This could result in inaccurate remaining schedule information.
- Criteria: No tasks have actual start or finish dates later than the current IMS status date.
- Filter: Non-Summary, Non-Completed except for tasks with Actual Start or Actual Finish greater than the Current Status Date (N_Future) NOTE: The filter will need to be modified each time the tests are accomplished for the current status date.
- Sort: Sort for each of the following:
 - 1) Actual Start field
 - 2) Actual Finish field
- Steps in MS Project:
 - 1) Sort for Actual Start field.
 - 2) This filter should return only incomplete tasks and properly statused tasks without actual dates in the future. However, if tasks with actual dates greater than the current status date appear, count those tasks.
 - 3) Count the tasks with actual start dates in the future.
 - 4) Sort for Actual Finish field.
 - 5) Count the tasks with actual finish dates in the future. Do not double count tasks that were already counted for having actual start dates in the future.
 - 6) Add these two counts together to get a total.
 - 7) Divide this by the total number of tasks in this view, reflecting the percentage of tasks with actual dates in the future.
- Steps in Excel:
 - 1) This is a manual check. Turn off the Auto Filter to clear the filters. Turn Auto Filter back on.
 - 2) Go to the Actual Start column, approximately column H. Click on the column Auto Filter and choose "Is After" and input the status date. The check is for actual starts in the future. Find the status date for the project. Go to the filter for column I Actual Finish. Choose the filter and verify the dates are less than or equal to the status date.



- 3) Document the number of errors
- 4) Release the filter on actual start. Repeat for the Actual Finish column 1 over.
- 5) Document the answers. See below for an example:

- How to Interpret: Status in the future is impossible however it is a feature unique to MS Project. This filter is only looking at tasks completed or started in the future. The result therefore is any status beyond time now is a finding. The GASP justification is #4 Status is not demonstrated, the schedule has not been statused only through the status date. Intent Guide 6 “The schedule provides current status and forecasts of completion dates for all discrete authorized work.

GASP 4 Test 2 (Overall #19): IMS Stated Through Time Now

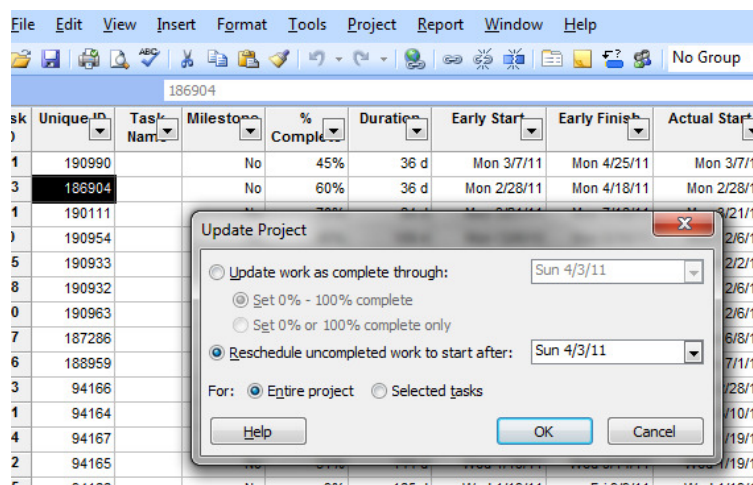
- Overview: The schedule should reflect progress and accurate remaining work as of the current status date. Tasks started but not completed and in-progress tasks must be stated through the current status date, reflecting accurate remaining duration and projected forecast finish dates. This test creates a what-if scenario to identify tasks that are not properly stated. This should not be saved or used for further analysis.
- Criteria: No tasks should have been inappropriately stated.
- Filter: Non-Summary, Non-Completed except for tasks with Actual Start AND without Actual Finish (N_Prog)
- Sort: Actual Start, then Actual Finish, lowest to highest value
- Steps in MS Project:
 - 1) In MSP – Choose “Format – Bar Styles” and go to the “Task Status” line. Change the color of the line to one not yet chosen (see graphic below)
- Steps in Excel: This test cannot be accomplished utilizing Excel. It must be accomplished in MS Project or in the native schedule tool with the contractor.
- How to Interpret: Tasks not stated through the status date, inappropriately are forecast in the past. Not all schedule tools allow this anomaly to occur. Any status not current is a finding and documented. In the example below, there were tasks stated in the past and the future. The color fuchsia in the example should always rest against the status line. Any anomalies are findings. The GASP justification is #4 Status not demonstrated, the schedule status is not accurate. The Intent guide #6 “The schedule provides current status and forecasts of completion dates for all discrete authorized work.”

Adjust the color of this line

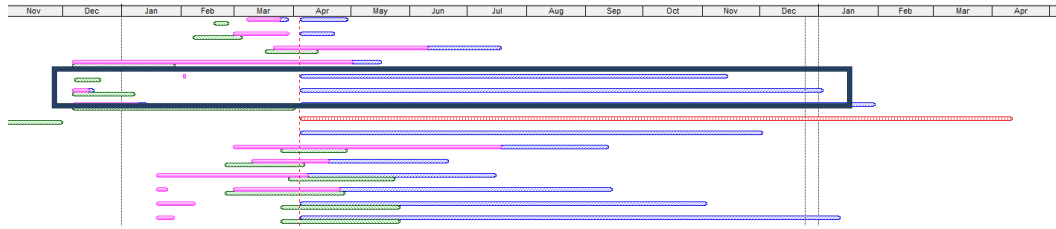
Verify the color line (fuchsia in the example) against the red dashed line (status date)



Further information is provided below as how this error occurs. Under the Tools Menu, the command Tracking – Update Project brings the drop box below. By rescheduling through the status date of 4/3/2011 in this example, the following graphic shows the fuchsia line much closer to the status date and the forecast to after the date. Each month this should be accomplished before remaining duration or estimated finishes are put into the schedule. In the example there are still lines with future status and this is a problem. Note: MS Project will not status tasks properly with actuals in the future (Check 18) or with constraints which other test criteria limit them.



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Results of same tasks with the status with reschedule through the status date.
Notice the highlighted tasks 5 and 6 that estimated finishes went out in time.

Name: ☐ Show in menu

Filter:

And/Or	Field Name	Test	Value(s)
	Summary	equals	No
And	Actual Start	does not equal	NA
And	% Complete	is less than	100%
And	Actual Finish	equals	NA

☐ Show related summary rows

GASP 5: Predictive

GASP 5 Test 1 (Overall #20): Push Forward Test

- Overview: A slip to a discrete task's finish should have an impact to the program end milestone. This test creates a what-if scenario to illustrate the veracity of the IMS network. This should not be saved or used for further analysis.
- Criteria: N/A
- Filter: Non-LOE, Non-Summary, Non-Completed (n-loepart)
- Sort: Total Float field, lowest to highest values
- Steps in MS Project:
 - 1) Ensure the program end milestone has an appropriate constraint applied; such as MSO, MFO, or FNLT.
 - 2) Note the existing total float of the program end milestone and key events. Also note any significant float for any task by sorting the IMS by total float.
 - 3) May need to eliminate other hard constraints found in Test 17 so that the test can fully check the network logic.
 - 4) Find a discrete task scheduled within the next 90 calendar days with zero or negative float. The task should be directly related to the next significant program event.
 - 5) Add 500 days to the existing duration.
 - 6) Recalculate the schedule.
 - 7) Reapply the sort by the Total Float field.
 - 8) Examine the float value of the program end milestone. The total float value should have been reduced approximately 500 working days.
 - 9) Examine the float values of the successor path tasks. These tasks should have negative float values of 400 to 500 working days (assuming these did not originally have high float values in step 3). Note any discrete tasks with float values more positive than negative 400 days that in step 3 did not have excessive positive float. For example, float values of negative 300 days or +15 days. They may indicate discrete tasks not logically tied to the program end milestone that should be reviewed.
- Steps in Excel: There is no Excel substitute. If not using MS Project this test must be done at the contractor's facility in the native schedule tool.
- How to Interpret: This test is a general integrity check. Findings, if any, may mirror other tests but looking out in the future. The expectation is that most discrete non-delivery tasks are slipped about 2 ½ years. Concerns and possible findings would be based on tasks with less than about 350 negative days of float. Justification would be based on the circumstances. Note in interpreting this test be aware of the results in Tests 8, 11, 13 and 17. For example have highly excessive constraints such as 75% the results of this test may be impacted.

GASP 5 Test 2 (Overall #21): Push Backward Test

- Overview: An accelerated earlier constraint to a program end milestone impacts every task that is logically tied to that milestone. This test creates a what-if scenario to illustrate the veracity of the IMS network. This should not be saved or used for further analysis.
 - Criteria: N/A
 - Filter: Non-LOE, Non-Summary, Non-Completed (n-loepart)
 - Sort: Total Float field, lowest to highest values
- 10) Steps in MS Project:
- 1) Note the existing float, if any, of the program end milestone and key events. Also note any significant float for other tasks by sorting the IMS by total float.
 - 2) Select the program end milestone that completes the project.
 - 3) Place a constraint that prevents it from being moved by its logical dependencies (hard constraint MFO) one year earlier than the current early finish date.
 - 4) Recalculate the schedule.
 - 5) Reapply the sort by the Total Float field.
 - 6) Examine the float of the other discrete tasks. Many tasks should reflect large negative values. Note any discrete tasks with float values more positive than negative 50 days. For example float values of negative 45 days or +15 days.
 - 7) They may indicate discrete tasks not logically tied to the program end milestone that should be reviewed.
- Steps in Excel: There is no Excel substitute. If not using MS Project this test must be done at the contractor facility in the native schedule tool.
 - How to Interpret: 240 working days is approximately one work year. Using this test highlights tasks that are logically tied to the program end milestone. If the logic is sound, this test should impact all predecessor path discrete tasks that are logically tied to the program end milestone. If a task is not impacted, it should be reviewed to determine if there are missing successors and should be fixed accordingly. If the logic is not missing, tasks should be reviewed to determine if they are valid and belong in the schedule. Consider if tasks should be reclassified as LOE. Findings if any would follow Test 8 justifications.

GASP 5 Test 3 (Overall #22): No LOE on Predecessor Path to Project Complete

- Overview: LOE tasks that are logically tied to the program end milestone have potential to be on the critical path, which is a logic error. A method to test for this is to add an accelerated earlier constraint to a program end milestone that will impact every task that is logically tied to that milestone. This is most effective after any issues found during Test 2 above have been resolved. The intent of this test is to observe if any LOE tasks are impacted. This test creates a what-if scenario. This should not be saved or used for further analysis.
- Criteria: No LOE should be on the predecessor path to the program end milestone.
- Filter: Non-Summary, Non-Completed (n-summaryc)
- Sort: LOE identified field, then Total Float (Slack) field, lowest to highest value
- Steps in MS Project:
 - 1) With the schedule filtered and sorted, copy the unique identifiers and total float values for LOE tasks.
 - 2) Paste these values in Excel.
 - 3) In the IMS, select the program end milestone that completes the project.
 - 4) Place a constraint that prevents it from being moved by its logical dependencies (hard constraint) one year earlier than the current early finish date. (This step is repeating the process in Test 21 above).
 - 5) Recalculate the schedule.
 - 6) Copy the same set of float values that are now based on the previous step.
 - 7) Paste in Excel in an adjacent column and in alignment with the first set of float values.
 - 8) Compare the float values.
 - 9) Note and count any differences in total float values, reflecting LOE that are logically tied to the program end milestone.
- Steps in Excel: Can get close with manual steps.
 - 1) This is a manual check. Turn off the Auto Filter to clear the filters. Turn Auto Filter back on.
 - 2) Go to the %C column. Click on the column Auto Filter and choose "Numeric Filter" Not equal and input "1". This filters for non-completed tasks
 - 3) Go to the EVT column. Filter for LOE tasks
 - 4) Look at the float column. None should be 0 or negative. If 0 examine links to see if to tasks with discrete predecessors or successors.
 - 5) Document any exceptions.
- How to Interpret: This is a potentially a finding. Verify all instances with the program. Unless the LOE has no links to discrete work and it is a hammock with discrete children it is a finding. LOE represents work not related to the technical scope to perform. It is typically a management type task. Discrete work in contracts is work related to producing the performance requirements of the contract. Therefore LOE may never be linked to a discrete task or milestone that impacts the critical path. Intent Guide 6 "The schedule describes the sequence of work and should consider the significant interdependencies that are indicative of the actual way the work is accomplished. The schedule links key detail work packages and planning packages (or lower level tasks/activities) with summary activities and milestones."

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Name: ☐ Show in menu

Filter:

Actual Finish			
And/Or	Field Name	Test	Value(s)
	Summary	equals	No
And	% Complete	is less than	100%
And	Actual Finish	equals	NA

☐ Show related summary rows

GASP 5 Test 4 (Overall #23): Constraint Dates Set to Endpoint Milestones

1. Overview: Constraints should be applied to endpoint milestones so that total float is accurately calculated for the schedule network. These constraints should reflect program management's agreed to target dates and permit precedence impacts while still accurately calculating total float values.
2. Criteria: No endpoint milestones are missing appropriately applied constraints.
3. Filter: Milestones (n-milestones)
4. Sort: Early Finish
5. Steps in MS Project:
 - 1) Browse the schedule for endpoint milestones. They should be toward the end of the display.
 - 2) Determine if appropriate constraints have been applied. Appropriate constraints are anything except ASAP or ALAP.
6. Steps in Excel:
 - 1) Turn off Auto Filters and clear the prior filters. Turn on Auto Filters
 - 2) Go to the Milestone column C. Choose "Yes" only.
 - 3) Choose the drop-down in Column G. Choose sort by "Newest to Oldest". The top of the file should be the completion milestones.
 - 4) Determine if appropriate constraints have been applied.

Unique	Task Name	Milestone	%C	Duration	Early S	Early F	Act Start	Act Fin	OBS	PT	Pred	Succ	Con Type	Tot Floa	La
189005	Program End	Yes	0%	0	1/17/2012 17:00	1/17/2012 17:00	NA	NA		PM	2293,2295,290	290	As Soon As Possible	160 d	

Above is an example of an end milestone without an adequate constraint. The program end is at the end of the project and the constraint type to the right is As Soon as Possible. This is not a constraint that will impact float. Accordingly the float on the end milestone is 160 days (last column)

7. How to Interpret: Float equals the difference between the task finish and the requirement to finish related to the next constraint. A schedule with no constraints on delivery milestones is called unconstrained. An unconstrained schedule will not provide meaningful float to the delivery requirements of the contract, providing limited management value. There may also be constraints on key milestones such as PDR and CDR or intermediate delivery milestones without logical contractual successors. These may also be milestones.

The determination of a finding is subjective. Have the right tasks been constrained? If not the justification is Intent Guide 6 "Significant interdependences should be defined at a consistent level of detail to support development of a critical path. The minimum level linkage is at the work package and planning package level. The schedule should be designed for effective management purposes and contain a critical path for the entire contractual period of performance."

GASP 5 Test 4 (Overall #24): Baseline Execution Index and Task Hit/Miss

8. Overview: BEI is a performance based measure of work completed versus should have completed. A program successfully executing will have completed all the work they needed to and would have a 1.0 BEI. Task hit/miss is related and
9. Criteria: 95% or better BEI metric. 5% or less for the hit/miss metric.
10. Filter1 BEI and TH Baseline Count: No Summary, Milestones, LOE. B/L Finish before status date
11. Filter 2 BEI Completed Tasks: No Summary, Milestones, LOE,; B/L Finish Before Status date, Actual Finish = NA
12. Filter 3 Incomplete Tasks No Summary, Milestones LOE; B/L Finish Before Status date, Finish Variance is > 0.
13. Sort: NA
14. Steps in MS Project:
 - 1) Run Filter 1 BEI and TH Baseline Count. Document the result as the denominator for BEI and the Task Hit/Miss calculations
 - 2) Run Filter 2. This is the numerator for BEI.
 - 3) Calculate BEI ratio Step 2 result divided by Step 1 result.
 - 4) Run Filter 3.
 - 5) Document the Task Hit and Miss Ratio. Results Step 4 / Results Step 1.
15. Steps in Excel:
 - 1) These steps must be run sequential and carefully to get accurate results. There are three macros and user input required to calculate the three metrics. The user will need to have the reporting period dates from Format 1 that coincides with the IMS. This is the manual part of the test as the report date will be different in every schedule.
 - 2) Optional. Check the date formats in Columns G, I, and K (Early Finish, Actual Finish, and Baseline Finish). The MSP default format is Mon 6/20/2010. Excel reads this as a text field. If this is the format in the referenced columns it must be converted before the dates can be processed. Run the "BEI_Adjust_Dates" macro. [Note – The version of excel may ask the user to confirm replacement of cells. Choose "Yes" if prompted.]

A	B	C	D	E	F	G	H	I	J	K	L
Task Count	2763				Total						
1		2	3	4	5.00	6	7	8	9	11	12.00
UID	Task Name	Milestone	%C	Duration	Early Start	Early Finish	Act Start	Actual Finish	Baseline Finish	Base Dur	WBS
4		Yes	100%	0.00	Fri 8/20/10	8/20/10	Fri 8/20/10	8/20/2010	8/20/2010	0.00	
6		Yes	0%	0.00	Fri 10/29/10	10/29/10	NA	NA	12/21/2010	0.00	
7		Yes	0%	0.00	Thu 10/20/11	10/20/11	NA	NA	11/5/2011	0.00	

Results of the BEI_Adjust_Dates Macro. Look at columns F and G above. Column F is the text default from MS Project that the schedule check needs to be in date format. Columns G, I, J or Early Finish, Actual Finish, Baseline Finish have been converted by the macro to remove the day on the week and convert to a standard date format readable by excel.

- 2) Run the BEI1 macro.
- 3) Manually filter to remove the LOE.
- 4) Manually adjust the filter in column K and choose "Date Filters" and "Before" and input one day after the status period. For example if the status period is 6/20/2010 input 6/21/2010.
- 5) Manually copy cell B2 to cell AC1 and Paste-Values.
- 6) Goto the first cell under the auto filter in column L [this column is not titled}. Input the formula =IF(K4>=I4,"Yes","No") NOTE: The first row under the filter should be the row number in the formula.

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1	Task Count	54			Total	3525			BEICUM	BEICUM	
2	1	2	3	4	5.00	6	7	8	9	10	11
3	UID	Task Name	Milestone	%C	Duration	Early Start	Early Finish	Act Start	Actual Finish	Baseline Start	Baseline Finish
121	119		Vo	100%	20.00	Fri 10/1/10	10/28/10	Fri 10/1/10	10/28/2010	10/13/2010	No

Example with the formula placed in the last column. With the filter the first line of data is line 121. So the “6”s in the formula need replaced by “121”. The formula becomes
`=IF(K121>=I121,"Yes","No")`

- 7) Copy the formula to the bottom of the last row of data.
- 8) Filter column L = “Yes”.
- 9) Copy Cell B1 value to cell Z1. This is the amount of tasks finished equal to or less than the baseline date.
- 10) Manually put the formula Z1/AC1 in cell K1 BEI Cum. Copy paste- value the answer.

Step 5 and step 9 results. The references to Z1 and AC1 are relative and assume three columns have been inserted by the BEI1 macro. Step 5 is always inserted next to “BEI Baseline Count” and signifies the baseline tasks required before the current status date. Step 9 is inserted next to the “Completed Tasks” and signifies the number tasks completed before or on-time compared to the baseline. These are the numerator and denominator for the BEI calculation.

- 6) 8) Manually filter Baseline Finish in K3. Choose “Date Filters” and “Between”. Input the status period start and finish for the current period.
- 9) Run BEI3. This completes the ratios, deletes the added columns and returns the file close to the original position (it leaves any converted date formats changed).

16. How to Interpret: BEI is a measure of the progress of completing the baseline. When the baseline completion is more than 5% behind (BEI .95), it is an indication that the schedule may be in jeopardy of successful completion. The task/hit is similar but reverses the denominator and numerator of BEI and simply measures the tasks not complete over the total. A 5% or more ratio indicates that the schedule may be in jeopardy of successful completion. BEI current is the same as BEI except limited to the reporting month. Since all three metrics are performance based the results are not candidates for findings. Rather program offices may be notified of the risk to performance and a risk mitigation plan may be warranted.

Appendixes

- 1) GASP Overview
- 2) MS Project Tips
- 3) Excel Tips

Appendix 1 Generally Accepted Scheduling Principles (GASP)

The GASP are eight concise overarching tenets for building, maintaining, and using schedules as effective management tools. The first five GASP tenets describe the requisite qualities of a valid schedule; that is, one that provides complete, reasonable, and credible information based on realistic logic, durations, and dates. The latter three GASP tenets reflect increased scheduling maturity that yields an effective schedule. An effective schedule provides timely and reliable data, helps align time-phased resources, and is built and maintained using controlled and repeatable processes.

GASP Description

Achieving a GASP-compliant schedule indicates the schedule is a useful and practical tool for effective program management. Thus, meeting all eight GASP tenets demonstrates that the program team builds and maintains the schedule with rigor and discipline, so the IMS remains a meaningful management tool from program start through completion

The GASP serves several purposes. First, they are high level tenets, or targets, for sound scheduling. The GASP also serves as a validation tool for the program team or organization to assess schedule maturity or schedule areas needing improvement. Last, the GASP can be used as governance tools to assess new or different scheduling approaches with objectivity and detachment.

It is essential to understand that the GASP are intentionally broad and should not limit program teams from continuous improvement and creativity when exploring tools and processes for building and maintaining robust schedules. There will be times when a given practice diminishes compliance to one principle over another. This is expected and unavoidable, but what is paramount is that the program team weighs benefits vs. the risks. The GASP provides an independent mechanism to determine the acceptability of proposed schedule practices.

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Generally Accepted Scheduling Principles (GASP)			GASP Narrative	GASP Essential Statement
Valid	1	Complete	Schedules represent all authorized effort for the entire contract, with essential subcontracted or other external work or milestones integrated yet distinguishable from internal work. Level of Effort may be excluded from the IMS.	The schedule captures the entire discrete, authorized project effort from start through completion.
	2	Traceable	Schedules reflect realistic and meaningful network logic that horizontally and vertically integrates the likely sequence for program execution. Schedules are coded to relate tasks or milestones to source or dependent documents, tools, and responsible organizations.	The schedule logic is horizontally & vertically integrated with cross-references to key documents & tools.
	3	Transparent	Schedules provide full disclosure of program status and forecast and include documented ground rules, assumptions, and methods for building and maintaining schedules. Documentation includes steps for analyzing the critical paths, incorporating risks and opportunities, and generating schedule health and performance metrics.	The schedule provides visibility to assure it is complete, traceable, has documented assumptions, & provides full disclosure of program status & forecast.
	4	Stated	Schedules reflect consistent and regular updates of completed work, interim progress, achievable remaining durations relative to the status date, and accurately maintained logic relationships.	The schedule has accurate progress through the status date.
	5	Predictive	Schedules accurately forecast the most likely completion dates and impacts to the program baseline plan through valid network logic and achievable task durations from the status date through program completion.	The schedule provides meaningful critical paths & accurate forecasts for remaining work through program completion.
Effective	6	Usable	Schedules produce meaningful metrics for timely and effective communication and tracking and improving performance, mitigating issues and risks, and capturing opportunities. Schedules are robust and functional to help stakeholders manage different levels, groupings, or areas as needed. Schedules are developed and maintained at a size, level, and complexity such that they are timely and enable effective decision-making.	The schedule is an indispensable tool for timely & effective management decisions & actions.
	7	Resourced	Resources align with the schedule baseline and forecast to enable stakeholders to view and assess the time-phased labor and other costs required to achieve project baseline and forecast targets. Each program is unique and uses varying techniques to load, baseline, and maintain the time-phased resources at levels that are practical and produce meaningful and accurate projections. When resource-loaded schedules are used they enable flexible updates to resource requirements as conditions change. Whether or not resource-loaded schedules are used, cost and schedule data are integrated for internal and external reporting.	The schedule aligns with actual & projected resource availability.
	8	Controlled	Schedules are baselined and maintained using a rigorous, stable, repeatable, and documented process. Schedule additions, deletions, and updates conform to this process and result in valid and accurate results for sound schedule configuration control and maintenance.	The schedule is built, baselined, & maintained using a stable, repeatable, & documented process.

GASP Description

The chart below shows the GASP criteria, characteristics of a schedule that meets GASP and the artifacts observed in performing the IMS5 GASP Assessment.

GASP Tenet	Characteristics	Artifacts / Examples
Complete	<ul style="list-style-type: none"> Aligns to SOW Aligns to IMP Includes completed, ongoing, & future work Maximizes schedule visibility 	<ul style="list-style-type: none"> SOW, IMP, WBS Entire scope & budget / archived data CDRLS / CLINS Entire program (logic tasks, external non-program influences, supplier integration)
Traceable	<ul style="list-style-type: none"> Vertically Integrated Horizontally Integrated Traces to key EVM artifacts Cross-referenced to source document 	<ul style="list-style-type: none"> Predecessors, Successors Program milestones SOW, WBS, IMP codes aligned Control Accounts (RAM, CAPs, Work Authorizations) Responsibility identified (CAM) Work Packages & Planning Packages EV methods / techniques
Transparent	<ul style="list-style-type: none"> WBS, SOW, IMP visibility Auditable Documented assumptions Only ONE IMS 	<ul style="list-style-type: none"> WBS, SOW, IMP reference numbers "Battle Rhythm" reflects discipline Notes for caveats, assumptions, constraints
Stated	<ul style="list-style-type: none"> Timely Updated Status Date current Maintained 	<ul style="list-style-type: none"> Duration % Complete updated to status date Physical % Complete per EV methods All tasks stated/ rescheduled Remaining duration for in-progress tasks
Predictive	<ul style="list-style-type: none"> Achievable Meaningful program critical path Meaningful critical path(s) to major milestones SRA-ready, what-if capable Probable (likely) dates & durations 	<ul style="list-style-type: none"> Baseline dates, Forecast dates Remaining duration Total Float, Free Float Critical path calculated / cut-offs Variance to baseline plan Risk-mitigations incorporated
Usable	<ul style="list-style-type: none"> Managed using Total Float Baseline, actual, & forecast dates are meaningful & accurate Trends & metrics used to manage Becomes indispensable management tool / feature Consistent task naming 	<ul style="list-style-type: none"> Visible to program team Used in program reviews Impacts are visible Meaningful metrics ("hammer down nails") No options to "beat the metrics" Action verbs, clear work content, stand-alone, discrete, unique names
Resourced	<ul style="list-style-type: none"> Resources aligned to IMS Ideally, resource-loaded IMS 	<ul style="list-style-type: none"> Baseline dates & work (hours), costs align to BCWS Forecast dates & work (hours), costs align to ETC
Controlled	<ul style="list-style-type: none"> Stable, Repeatable process Baselined Additions & deletions controlled Data entry cut-off dates Controlled retroactive changes "Battle rhythm" followed 	<ul style="list-style-type: none"> System Description, Policies, Procedures Baseline Change Requests (BCRs) Instructions / Directives / IMS Supplemental Guidance Historical data / files / records Risk mgmt process aligned Master/ Subproject project structure (if applies)

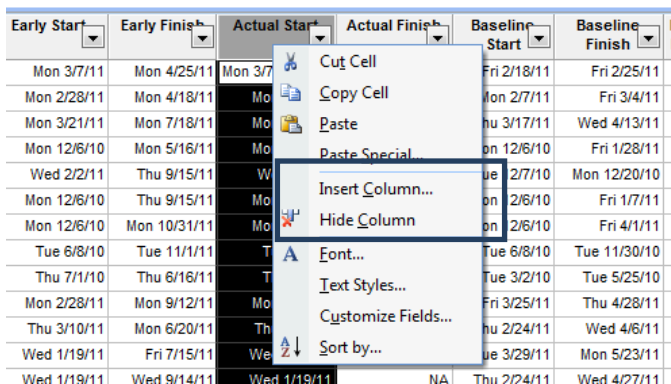
GASP Characteristics and Artifacts

Appendix 2 MS Project Tips

The NAVSEA IMS Schedule Health Assessment process assumes some basic understanding of the MS Project Functionality. Utilize this section if a part of the instructions are not clear.

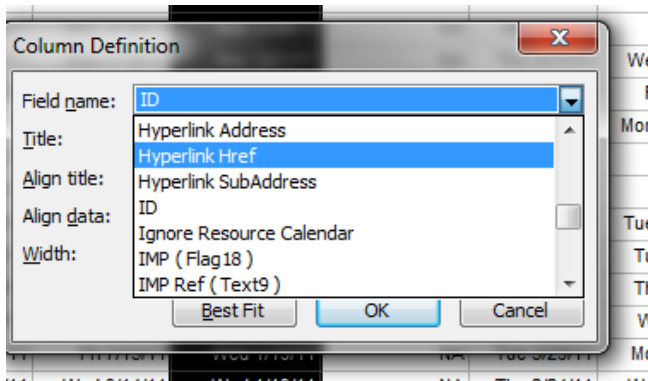
1) Viewing Data in MS Project

Viewing data in MS Project is basically a two part cycle. Within the left side is a spreadsheet that you can add or subtract columns, while the right side is the schedule graphic. There is a split between the two that can widen or shorten either side's view. To add or subtract a column you must highlight a column, right-click and choose Insert and then choose the field name. To delete a column from the view choose Hide. Please see below for an illustration.

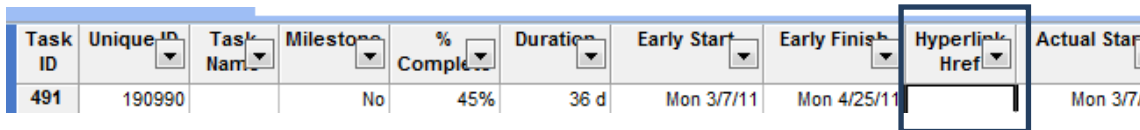


Early Start	Early Finish	Actual Start	Actual Finish	Baseline Start	Baseline Finish
Mon 3/7/11	Mon 4/25/11	Mon 3/7/11	Mon 4/25/11	Fri 2/18/11	Fri 2/25/11
Mon 2/28/11	Mon 4/18/11	Mon 2/28/11	Mon 4/18/11	Mon 2/7/11	Fri 3/4/11
Mon 3/21/11	Mon 7/18/11	Mon 3/21/11	Mon 7/18/11	Thu 3/17/11	Wed 4/13/11
Mon 12/6/10	Mon 5/16/11	Mon 12/6/10	Mon 5/16/11	Mon 12/6/10	Fri 1/28/11
Wed 2/2/11	Thu 9/15/11	Wed 2/2/11	Thu 9/15/11	Wed 2/2/11	Mon 12/20/10
Mon 12/6/10	Thu 9/15/11	Mon 12/6/10	Thu 9/15/11	Mon 12/6/10	Fri 1/7/11
Mon 12/6/10	Mon 10/31/11	Mon 12/6/10	Mon 10/31/11	Mon 12/6/10	Fri 4/1/11
Tue 6/8/10	Tue 11/1/11	Tue 6/8/10	Tue 11/1/11	Tue 6/8/10	Tue 11/30/10
Thu 7/1/10	Thu 6/16/11	Thu 7/1/10	Thu 6/16/11	Tue 3/2/10	Tue 5/25/10
Mon 2/28/11	Mon 9/12/11	Mon 2/28/11	Mon 9/12/11	Fri 3/25/11	Thu 4/28/11
Thu 3/10/11	Mon 6/20/11	Thu 3/10/11	Mon 6/20/11	Thu 2/24/11	Wed 4/6/11
Wed 1/19/11	Fri 7/15/11	Wed 1/19/11	Fri 7/15/11	Wed 3/29/11	Mon 5/23/11
Wed 1/19/11	Wed 9/14/11	Wed 1/19/11	Wed 9/14/11	Thu 2/24/11	Wed 4/27/11

Results of right-clicking after highlighting the Actual Start Field



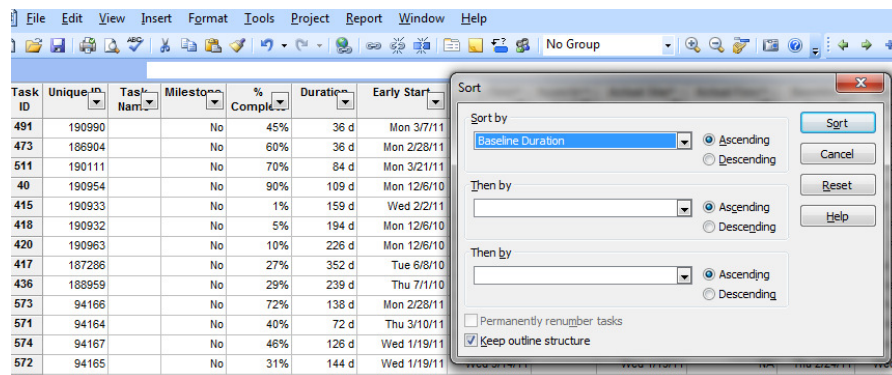
Choosing Insert above and the drop down Field Name displays every field in the MS Project Data base that can be shown. Select the appropriate and that field will be inserted.



Task ID	Unique ID	Task Name	Milestone	% Complete	Duration	Early Start	Early Finish	Hyperlink Href	Actual Start
491	190990		No	45%	36 d	Mon 3/7/11	Mon 4/25/11		Mon 3/7/11

2) Sorting Data in MS Project

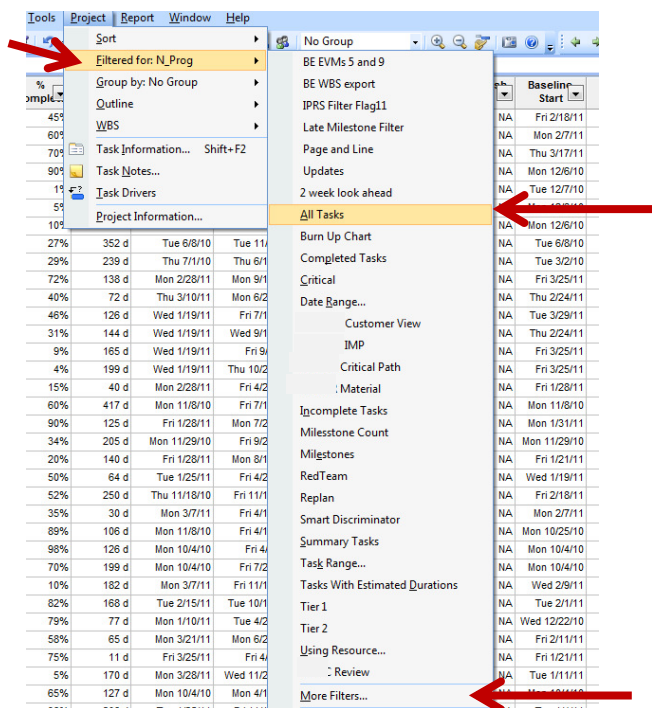
A sort affects the order that the data is shown. To select a sort in MS Project choose Project – Sort. The following screen is displayed.



Three fields may be sorted at the same time. Generally for this test only one sort will be applied at a time. Click the first dropdown in blue above and a list of all fields is available.

3) Filtering Data in MS Project

The Schedule Health assessment is built around filters to get the correct basis for each test. The filters may be created, edited, or removed at any time.

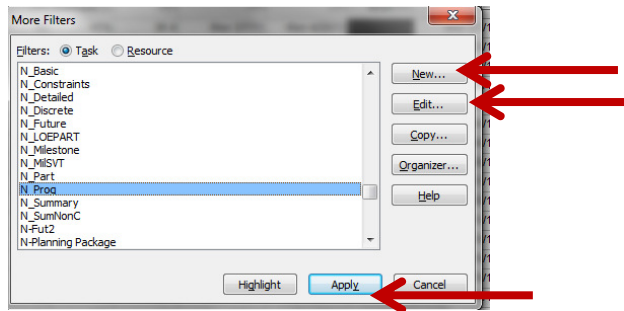


Display of Project – Filter for options. Starting from the left arrow the current filter is always displayed and it is N_Prog.

The top right area show where “All Tasks” is displayed. Use this filter to clear the existing filter before running the next test.

The bottom right “More Filters” is selected if you want to pick a filter not in the list or edit or delete a filter. It is used to evoke any test filter which all begin with N_

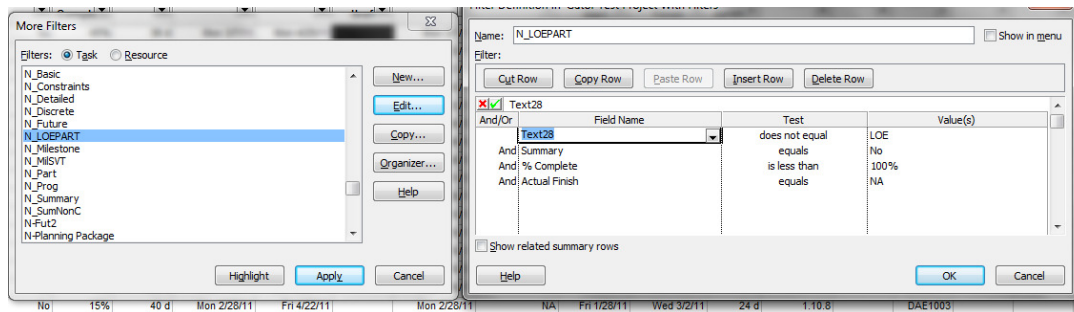
Selecting More Filters yields



Select New to create a new filter

Select Edit to change a filter. For example to change the text field associated with LOE.

Apply executes the filter selected, N_Prog. Scroll up or down to select others as directed by the test step.



Above the results of editing the N_LOEPART filter. Selecting the field name brings up a drop down box with every field. For example to change the LOE assignment from Text 28 to Text 14 click the drop down and scroll from Text 28 to Text 14 and left-click. To change the test column choose a row and the test choices display. Values is a test field you type to change. Choose “OK” to save and on the previous screen “Apply” to use the changes or “Cancel” to return to the prior screen.

4) Transferring data from MS Project

Copying data from MS Project depends on if one is transferring individual columns or from the current view. To transfer a column, select the column and right-click and choose copy. Go to Excel and highlight the column destination and cntl-v to paste. To copy the current view, use the follow steps:

- 1) Insert and hide columns to get the specific format desired. For the Excel checks the order must be exact as specified in the introduction.
- 2) Choose the upper left corner of the MS Project datasheet.

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Task ID	Unique ID	Task Name	Milestone	% Complete	Duration	Early Start	Early Finish	Actual Start	Actual Finish	Baseline Start	Baseline Finish	Baseline Duration	WBS	SOW	Text1	CA	CAM	EVT	IMP	IPT
491	190990		No	45%	36 d	Mon 3/7/11	Mon 4/25/11	Mon 3/7/11	NA	Fri 2/18/11	Fri 2/25/11	6 d	1.9.2		DBBJ1202					REG SEIT
473	186904		No	60%	36 d	Mon 2/28/11	Mon 4/18/11	Mon 2/28/11	NA	Mon 2/7/11	Fri 3/4/11	20 d	1.6.5		DBBJ9003					REG SEIT
511	190111		No	70%	84 d	Mon 3/21/11	Mon 7/18/11	Mon 3/21/11	NA	Thu 3/17/11	Wed 4/13/11	20 d	1.11.10		DBBC10010					REG SEIT
40	190954		No	90%	109 d	Mon 12/6/10	Mon 5/16/11	Mon 12/6/10	NA	Mon 12/6/10	Fri 1/28/11	33 d	1.3.3.3.6		BHFEA1301					es_REG SW
415	190933		No	1%	159 d	Wed 2/2/11	Thu 9/15/11	Wed 2/2/11	NA	Tue 12/7/10	Mon 12/20/10	10 d	1.3.6.5.2.9		BHFEB1301					es_REG SW
418	190932		No	5%	194 d	Mon 12/6/10	Thu 9/15/11	Mon 12/6/10	NA	Mon 12/6/10	Fri 1/7/11	18 d	1.3.6.5.2.12		BHFEB1302					es_REG SW
420	190963		No	10%	226 d	Mon 12/6/10	Mon 10/31/11	Mon 12/6/10	NA	Mon 12/6/10	Fri 4/1/11	78 d	1.3.6.5.2.14		BHFEB1501					es_REG SW

- 3) Selecting the cell labeled “Task ID” highlights all of the datasheet as shown above. Choose cntl-c to copy with every column highlighted.
- 4) Go to Excel and click in the cell you want the paste to start (A4 in the instructions of the test).
- 5) Note: The first column currently labeled “Task ID” will not copy. The spreadsheet in Excel has been adjusted for this and has no column equivalent for “Task ID.” If by chance another method is used that brings Task ID over to Excel, then the data will need shifted left by one column for the other data to align.

Appendix 3 Excel Tips

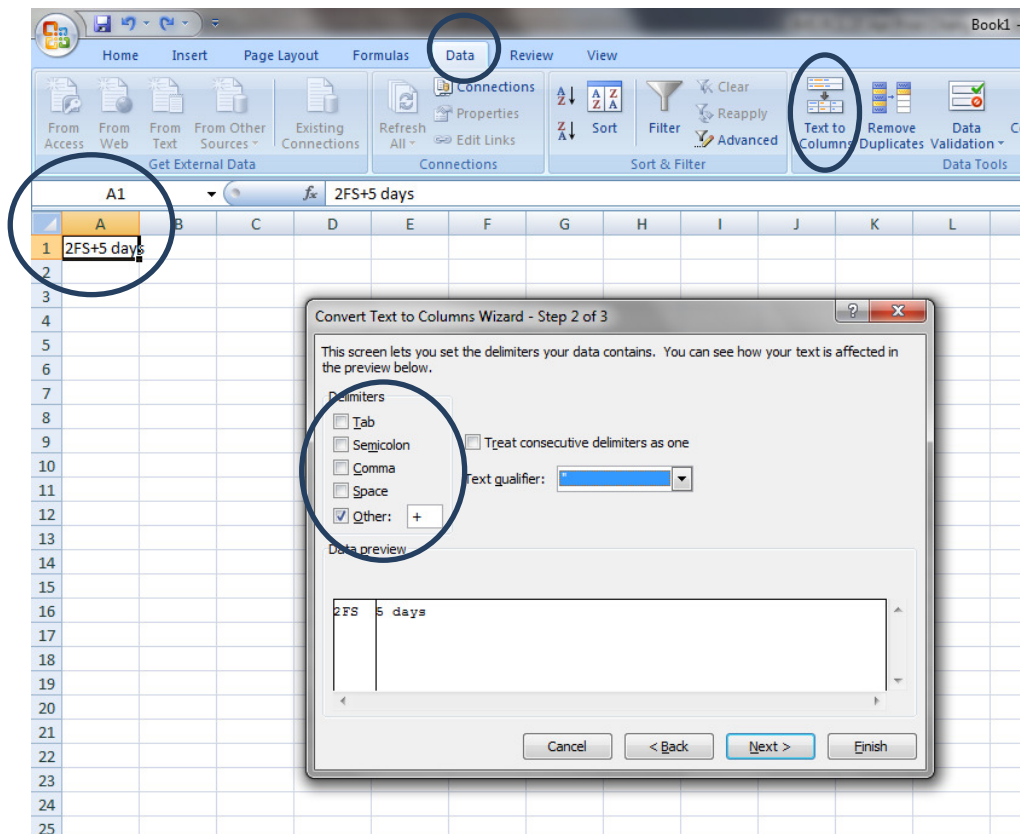
Regardless of how the native scheduling tool organizes and stores information, most tests can be accomplished manually by using Sorts and Filters, and Excel when needed. Below is a brief overview for data manipulation when utilizing Excel which will be required for some tests and optional for others.

1) Basic Converting Text to Columns in Excel

A test may require a particular data field, such as lag value. In schedule tools this may be merged with other information. An example is MS Project with Lags:

2	test	1 day	Wed 4/27/11	Wed 4/27/11	
3	test2	1 day	Thu 5/5/11	Thu 5/5/11	2FS+5 days

The predecessor, the relationship and lag are combined in the same field. The solution to segregate is to move the data over to MS Excel (Copy-Paste). By a series of Data-Text To Column command the data can be parsed into separate columns for analysis.

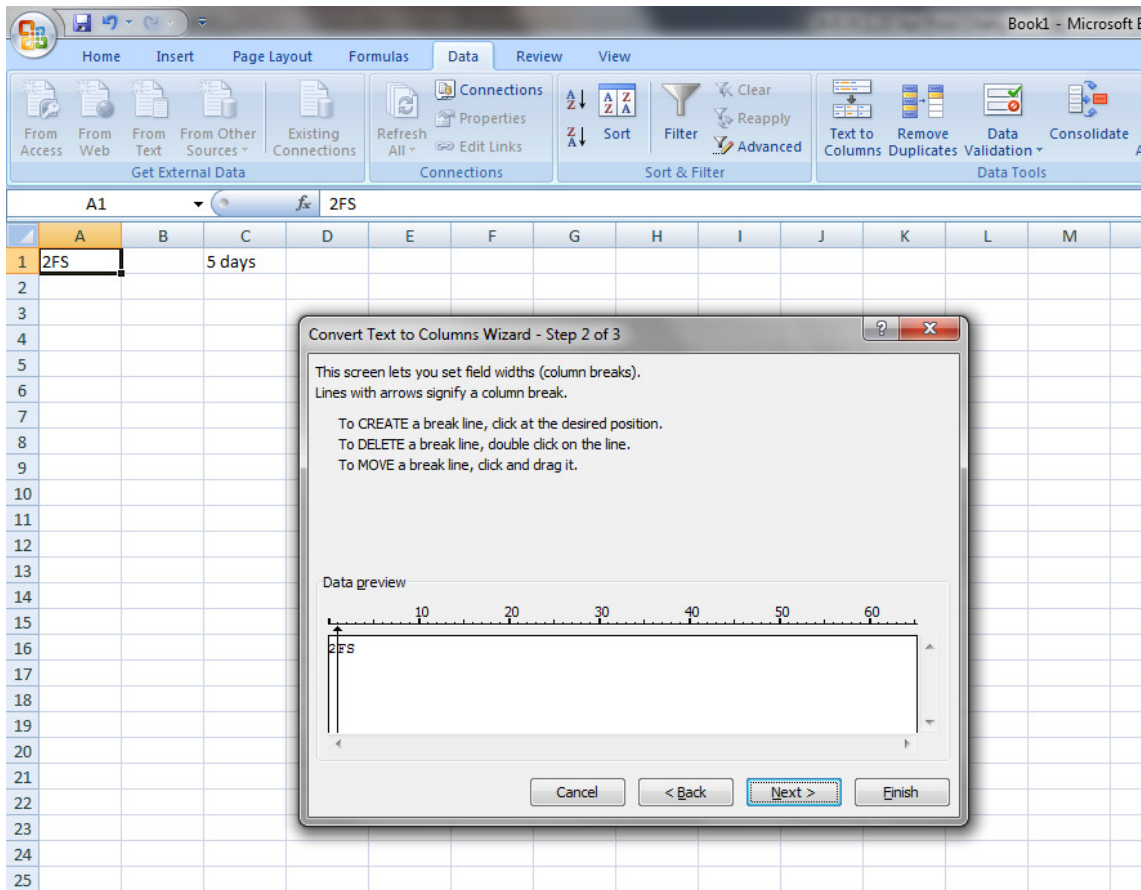


The diagram above highlights the complete steps. Highlight the data you want to split which is typically a column. Beware of any data to the right, the splitting will spill into columns B through X as necessary to fit the data. Then choose Data-Text to Columns as highlighted above. The step 2 wizard is critical. Typically the data is parsed by Comma, Space, or Other (+ or -). You will need to examine the data to see which is appropriate. In the simple example 2FS+5 is illustrated. Comma or Space would return no split but the space “+” will split the lag and the relationship.

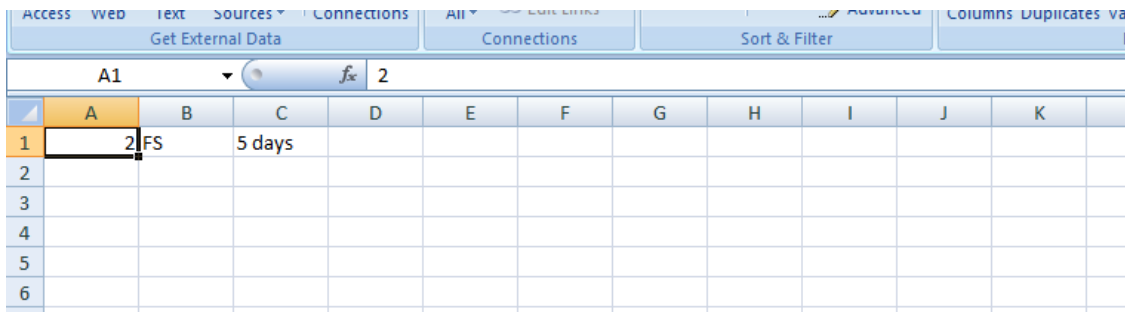
Below is the results of the “+” parsing. Column B previously blank now contains all of the data that was too the right of the plus. The plus has been removed and column A was to the left of the plus previously.

	A1		JK	ZFS				
	A	B	C	D	E	F	G	H
1	2FS	5 days						
2								
3								
4								

Adding another column between "A" and "B" allows splitting the 2 which is the predecessor ID and the FS which is the relationship. In other word Excel allows This process is shown below.



This results in the following:



All three combined data elements have now been split out for independent analysis.

2) Advanced Converting Text to Columns in Excel

Splitting the data from MS Project to Excel is rarely homogeneous or simple. For example a task may have 1, 2, 6, or 125 predecessors. Therefore splitting text into columns may take several columns. Take a real example of a complex task

2536,2548,2552,2550FS+1d,2551,2542,2544,2475,2462,2499,2553,2556,2466,2501,2513,2545,2464,2482,2483,2463,2476,2571FS+1 d,2570

This task has 23 predecessors and two lags of 1day. Each predecessor is split by a comma and each lag by a “+”. However the data when split will be one predecessor in each column B-V if the data started in A. So it is impossible to sub split the lag field because it will be in different columns. Also Text to Columns selecting “+” will not be fruitful, because the next column will contain several predecessors. The simple solution is to Text to Column by comma only for the basic split. Then select Home-Find to be able to count between the columns of similar data. This is the method used to find different relationships (SS, SF, FF) and leads and lags that are all buried within the predecessor field in MS Project. Please see below.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
880	687	450	872																				
975	687FS	25 d	450																				
865	687	450																					
816	687	450																					
897	687	450	872																				
751	687																						
745	687																						
733	657																						
739	657																						
2703																							
2068	2101	2216	2099																				
2106FS	11 d																						
2070																							
2071																							
2068	2216																						
2106																							
2106																							
2068	2216																						
2073																							
2106FS	18 d																						
2070																							
2076																							
2068	687	2216																					
2106																							
3208																							
643																							
1249	1256																						
1735	1736																						
1729																							
1703	1694																						
1953																							
485																							
2300	2302	2301	2304	2316	2326	2330	2331		2940	2305	2308	2332	2309	2310	2465	2560	2561	2675	2682	2689	2696	2710	2713
1590																							

Snapshot of live schedule data. The predecessor field was pasted into column A and the Data-Text to Column command was executed with the Comma Delimited and “+” Option simultaneous selected. The step would need repeated in another worksheet with the “-” instead of +. This allows the find to be used. A Find of “ d” would yield all of the positive lag and selecting next would allow a count. The same works for unique letters such as relationships like SS, SF, and FF that are requirements of other tests.

Snapshot of live schedule data. The predecessor field was pasted into column A and the Data-Text to Column command was executed with the Comma Delimited and “+” Option simultaneous selected. The step would need repeated in another worksheet with the “-” instead of +. This allows the find to be used. A Find of “d” would yield all of the positive lag and selecting next would allow a count. The same works for unique letters such as relationships like SS, SF, and FF that are requirements of other tests.

3) Counting

Take advantage of any native tool’s counting capability. If this does not exist, copy the activity unique identifier column from the native tool (after filtering and sorting have been applied) into Excel and use Excel’s counting capability.

